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NEWS 24 AUG 15 Caplus currency for Korean patents enhanced
NEWS 25 AUG 25 CA/Caplus, CASREACT, and IFI and USPAT databases enhanced for more flexible patent number searching
NEWS 26 AUG 27 CAS definition of basic patents expanded to ensure comprehensive access to substance and sequence information

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FILE COVERS 1907 - 3 Sep 2008 VOL 149 ISS 10
FILE LAST UPDATED: 2 Sep 2008 (20080902/ED)

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E1          1   US2008061270/PN
E2          1   US2008061271/PN
E3          1 --> US2008061272/PN
E4          1   US2008061273/PN
E5          1   US2008061274/PN
E6          1   US2008061282/PN
E7          1   US2008061283/PN
E8          1   US2008061284/PN
E9          1   US2008061285/PN
E10         3   US2008061286/PN
E11         1   US2008061287/PN
E12         1   US2008061288/PN
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L1 1 US20080061272/PN

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:1073677 CAPLUS
DN 143:349418
ED Entered STN: 07 Oct 2005
TI Nonflammable composition useful as a solvent
IN Caron, Laurent; Lallier, Jean Pierre
PA Arkema, Fr.
SO Fr. Demande, 10 pp.
CODEN: FRXXBL
DT Patent
LA French
IC ICM C11D007-50
ICS C07C021-073
CC 48-11 (Unit Operations and Processes)
Section cross-reference(s): 76

| FAN.CNT 1 | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----------|--|------|----------|-----------------|--------------|
| PI | FR 2868430 | A1 | 20051007 | FR 2004-3590 | 20040406 |
| | FR 2868430 | B1 | 20080801 | | |
| | WO 2005108542 | A1 | 20051117 | WO 2005-FR582 | 20050311 |
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CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BX, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG | | | | |
| | EP 1733018 | A1 | 20061220 | EP 2005-739522 | 20050311 |
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IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| | JP 2007531812 | T | 20071108 | JP 2007-506795 | 20050311 |
| | US 20080061272 | A1 | 20080313 | US 2006-593943 | 20061006 <-- |
| PRAI | FR 2004-3590 | A | 20040406 | | |
| | WO 2005-FR582 | W | 20050311 | | |

| CLASS | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
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| FR 2868430 | ICM | C11D007-50 | |
| | ICS | C07C021-073 | |
| | IPCI | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0021-00
[I,C]; C07C0021-073 [I,A] | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C23G0005-00 [I,C*];
C23G0005-028 [I,A] | |
| WO 2005108542 | ECLA | C11D007/50A6; C08J009/14H2; M11D | |
| | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00
[ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*] | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] | |
| | ECLA | C11D007/50A6; C08J009/14H2; M11D | |

EP 1733018 IPCI C11D0007-50 [I,A]; C23G0005-028 [I,A]; C23G0005-00
 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]
 IPCR C11D0007-50 [I,C]; C11D0007-50 [I,A]; C08J0009-00
 [I,C]; C08J0009-14 [I,A]; C11D0007-22 [N,C*];
 C11D0007-28 [N,A]; C23G0005-00 [I,C]; C23G0005-028
 [I,A]

ECLA C11D007/50A6; C08J009/14H2
 JP 2007531812 IPCI C11D0007-30 [I,A]; C11D0007-22 [I,C*]; C11D0007-50
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 IPCR C11D0007-22 [I,C]; C11D0007-30 [I,A]; C08J0009-00
 [I,C*]; C08J0009-14 [I,A]; C11D0007-28 [N,A];
 C11D0007-50 [I,C]; C11D0007-50 [I,A]; C23G0005-00
 [I,C]; C23G0005-02 [I,A]; C23G0005-028 [I,A]
 FTERM 4H003/DA01; 4H003/DA05; 4H003/DA12; 4H003/DC03;
 4H003/ED13; 4H003/ED26; 4H003/FA01; 4H003/FA45;
 4K053/RA08; 4K053/RA31

US 20080061272 IPCI C09K0003-00 [I,A]
 NCL 252/364.000; 252/182.120

AB The invention relates to a mixture containing trans-1,2-dichloroethylene 80-99 (preferably 95-98) and 1,1,1,3,3-pentafluoropropane 1-20 weight% (preferably 2-5%). The solvent is suitable for cleaning, degreasing, drying of solid surfaces, flux removal from printed circuits, dry cleaning of textiles, cleaning of refrigeration systems, as blowing agents for manufacture of polyurethane foams, as heat transfer fluids, and as propellants for aerosols.

ST dichloroethylene pentafluoropropane mixt solvent
IT Solvents
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane mixture as)
IT Blowing agents
IT Heat transfer agents
IT Propellants (sprays and foams)
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture as)
IT Cleaning
IT Degreasing
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for)
IT Printed circuits
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for cleaning and defluxing of)
IT Refrigerating apparatus
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for cleaning of)
IT Dry cleaning
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for dry cleaning of textiles)
IT 156-60-5, trans-1,2-Dichloroethylene 460-73-1, 1,1,1,3,3-Pentafluoropropane
RL: TEM (Technical or engineered material use); USES (Uses)
 (in trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Du Pont; WO 0017301 A 2000 CAPLUS
(2) Gorton, E; US 5851977 A 1998 CAPLUS
(3) Honeywell Int Inc; WO 03078539 A 2003 CAPLUS

=> s 156-60-5 and 460-73-1

REG1stry INITIATED

Substance data SEARCH and crossover from CAS REGISTRY in progress...

Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

L3 880 L2

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Substance data SEARCH and crossover from CAS REGISTRY in progress...
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L5 3172 L4

L6 28 L5 AND L3

=> e caron laurent/au
E1 1 CARON L M/AU
E2 4 CARON LAURENCE/AU
E3 31 --> CARON LAURENT/AU
E4 14 CARON LAURENT G/AU
E5 1 CARON LAURENT S J/AU
E6 1 CARON LEIGH/AU
E7 1 CARON LEO P R/AU
E8 1 CARON LEROY A/AU
E9 11 CARON LESLIE/AU
E10 6 CARON LESLIE LU ANN M/AU
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E12 2 CARON LIETTE/AU

=> s e3 or e4
31 "CARON LAURENT"/AU
14 "CARON LAURENT G"/AU
L7 45 "CARON LAURENT"/AU OR "CARON LAURENT G"/AU

=> s l6 and l7
L8 3 L6 AND L7

=> d 1-3 all

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:1073677 CAPLUS
DN 143:349418
ED Entered STN: 07 Oct 2005
TI Nonflammable composition useful as a solvent
IN Caron, Laurent; Lallier, Jean Pierre
PA Arkema, Fr.
SO Fr. Demande, 10 pp.
CODEN: FRXXBL
DT Patent
LA French

IC ICM C11D007-50
 ICS C07C021-073
 CC 48-11 (Unit Operations and Processes)
 Section cross-reference(s): 76

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| PI FR 2868430 | A1 | 20051007 | FR 2004-3590 | 20040406 |
| FR 2868430 | B1 | 20080801 | | |
| WO 2005108542 | A1 | 20051117 | WO 2005-FR582 | 20050311 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG | | | | |
| EP 1733018 | A1 | 20061220 | EP 2005-739522 | 20050311 |
| R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| JP 2007531812 | T | 20071108 | JP 2007-506795 | 20050311 |
| US 2008061272 | A1 | 20080313 | US 2006-593943 | 20061006 |
| PRAI FR 2004-3590 | A | 20040406 | | |
| WO 2005-FR582 | W | 20050311 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| FR 2868430 | ICM | C11D007-50 |
| | ICS | C07C021-073 |
| | IPCI | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0021-00
[I,C]; C07C0021-073 [I,A] |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C23G0005-00 [I,C*];
C23G0005-028 [I,A] |
| | ECLA | C11D007/50A6; C08J009/14H2; M11D |
| WO 2005108542 | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00
[ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*] |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| | ECLA | C11D007/50A6; C08J009/14H2; M11D |
| EP 1733018 | IPCI | C11D0007-50 [I,A]; C23G0005-028 [I,A]; C23G0005-00
[I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C08J0009-00
[I,C]; C08J0009-14 [I,A]; C11D0007-22 [N,C*];
C11D0007-28 [N,A]; C23G0005-00 [I,C]; C23G0005-028
[I,A] |
| | ECLA | C11D007/50A6; C08J009/14H2 |
| JP 2007531812 | IPCI | C11D0007-30 [I,A]; C11D0007-22 [I,C*]; C11D0007-50
[I,A]; C23G0005-02 [I,A]; C23G0005-00 [I,C*] |
| | IPCR | C11D0007-22 [I,C]; C11D0007-30 [I,A]; C08J0009-00
[I,C*]; C08J0009-14 [I,A]; C11D0007-28 [N,A];
C11D0007-50 [I,C]; C11D0007-50 [I,A]; C23G0005-00
[I,C]; C23G0005-02 [I,A]; C23G0005-028 [I,A] |
| | FTERM | 4H003/DA01; 4H003/DA05; 4H003/DA12; 4H003/DC03;
4H003/ED13; 4H003/ED26; 4H003/FA01; 4H003/FA45;
4K053/RA08; 4K053/RA31 |

US 20080061272 IPCI C09K0003-00 [I,A]
NCL 252/364.000; 252/182.120

AB The invention relates to a mixture containing trans-1,2-dichloroethylene 80-99 (preferably 95-98) and 1,1,1,3,3-pentafluoropropane 1-20 weight% (preferably 2-5%). The solvent is suitable for cleaning, degreasing, drying of solid surfaces, flux removal from printed circuits, dry cleaning of textiles, cleaning of refrigeration systems, as blowing agents for manufacture of polyurethane foams, as heat transfer fluids, and as propellants for aerosols.
ST dichloroethylene pentafluoropropane mixt solvent
IT Solvents
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IT Blowing agents
Heat transfer agents
Propellants (sprays and foams)
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture as)
IT Cleaning
Degreasing
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for)
IT Printed circuits
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for cleaning and defluxing of)
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 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for cleaning of)
IT Dry cleaning
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for dry cleaning of textiles)
IT 156-60-5, trans-1,2-Dichloroethylene 460-73-1,
1,1,1,3,3-Pentafluoropropane
RL: TEM (Technical or engineered material use); USES (Uses)
 (in trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Du Pont; WO 0017301 A 2000 CAPLUS
(2) Gorton, E; US 5851977 A 1998 CAPLUS
(3) Honeywell Int Inc; WO 03078539 A 2003 CAPLUS

L8 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:1073675 CAPLUS
DN 143:327475
ED Entered STN: 07 Oct 2005
TI Blowing agent fire-resistant composition and its use.
IN Caron, Laurent
PA Arkema, Fr.
SO Fr. Demande, 10 pp.
CODEN: FRXXBL
DT Patent
LA French
IC ICM C08J009-04
 ICS C09K003-30; C11D007-50; C08G018-06; C08G101-00
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 23

| FAN.CNT 1 | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----------|---------------|------|----------|-----------------|----------|
| PI | FR 2868427 | A1 | 20051007 | FR 2004-3591 | 20040406 |
| | FR 2868427 | B1 | 20060908 | | |
| | WO 2005108478 | A1 | 20051117 | WO 2005-FR629 | 20050316 |

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| JP 2007531814 | T 20071108 JP 2007-506797 20050316 | |
| AT 398646 | T 20080715 AT 2005-739691 20050316 | |
| KR 2007015167 | A 20070201 KR 2006-720644 20061002 | |
| US 20080105848 | A1 20080508 US 2006-593945 20061006 | |
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| WO 2005-FR629 | W 20050316 | |
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| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
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| | IPCR C09K0005-00 [I,C*]; C08J0009-14 [I,A]; C09K0005-04 [I,A] | |
| | ECLA C09K003/30; C09K005/04B4B | |
| WO 2005108478 | IPCI C08J0009-14 [ICM,7]; C08J0009-00 [ICM,7,C*] | |
| | IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] | |
| | ECLA C08J009/14H2; C09K003/30; C09K005/04B4B | |
| EP 1732977 | IPCI C08J0009-14 [I,A]; C08J0009-00 [I,C] | |
| | IPCR C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] | |
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| CN 1942513 | IPCI C08J0009-14 [I,A]; C08J0009-00 [I,C*] | |
| | IPCR C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] | |
| | ECLA C09K003/30; C09K005/04B4B | |
| JP 2007531814 | IPCI C08G0018-28 [I,A]; C08G0018-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C09K0005-04 [I,A]; C09K0005-00 [I,C*]; C09K0003-30 [I,A] | |
| | IPCR C08G0018-00 [I,C]; C08G0018-28 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-00 [I,C]; C09K0003-00 [I,A]; C09K0003-30 [I,A]; C09K0005-00 [I,C]; C09K0005-04 [I,A] | |
| | FTERM 4F074/AA80; 4F074/AA81; 4F074/BA48; 4F074/BA53; 4J034/CA03; 4J034/CA04; 4J034/CA05; 4J034/CB03; 4J034/CB04; 4J034/CB05; 4J034/CC03; 4J034/DA01; 4J034/DB04; 4J034/DF01; 4J034/DG03; 4J034/DG23; 4J034/HA01; 4J034/HA07; 4J034/HA09; 4J034/HC12; | |

4J034/HC61; 4J034/HC64; 4J034/HC67; 4J034/HC71;
 4J034/MA11; 4J034/NA02; 4J034/QC01
 AT 398646 IPCI C08J0009-00 [I,C]; C08J0009-14 [I,A]
 IPCR C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00
 [I,C*]; C09K0005-04 [I,A]
 ECLA C08J009/14H2; C09K003/30; C09K005/04B4B
 KR 2007015167 IPCI C08K0005-02 [I,A]; C08K0005-00 [I,C*]; C09K0003-30
 [I,A]; C09K0005-04 [I,A]; C09K0005-00 [I,C*]
 US 20080105848 IPCI C09K0003-00 [I,A]
 NCL 252/067.000

AB A blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams manufacture comprises 5 - 74 weight% of 1,1,3,3-pentafluorobutane (I), 24 - 93 weight% of trans-1,2-dichloroethylene (II) and 2 - 46 weight% of 1,1,1,3,3-pentafluoropropane (III). A typical composition consists of 100 weight parts of polyol Stepanpol PS2412 and 5 weight parts of a blowing agent (consisting of 33 weight% I, 34 weight% II and 33 weight% III).

ST blowing agent fire resistant polyurethane polyisocyanurate foam; pentafluorobutane dichloroethylene pentafluoropropane blowing agent fire resistant foam

IT Blowing agents
 Fire-resistant materials
 (blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

IT Plastic foams
 Polyisocyanurates
 Polyurethanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

IT Hydrocarbons, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fluoro; blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

IT Polyesters, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (hydroxy-terminated; blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6,
 1,1,1,3,3-Pentafluorobutane 431-89-0, 1,1,1,2,3,3,3-Heptafluoropropane 460-73-1, 1,1,1,3,3-Pentafluoropropane
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

IT 439592-40-2, Stepanpol PS 2412
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
 (1) Shankland, I; US 2003234380 A1 2003 CAPLUS
 (2) Singh, R; WO 02099006 A 2002 CAPLUS

L8 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:4726 CAPLUS
DN 141:226487
ED Entered STN: 05 Jan 2004

T1 Trans-1,2-dichloroethylene for improving fire performance of urethane foam
AU Wu, Jinhuang; Bertolo, Christopher; Caron, Laurent
CS ATOFINA Chemicals, Inc., King of Prussia, PA, 19406, USA
SO Conference Proceedings - Polyurethanes Expo, Orlando, FL, United States, Oct. 1-3, 2003 (2003), 454-462 Publisher: Alliance for the Polyurethanes Industry, Arlington, Va.
CODEN: 69EXJK

DT Conference
LA English
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37

AB In the United States, HCFC-141b was phased out of urethane foam applications on Jan. 1, 2003. Zero ozone depletion-potential (ODP) alternatives such as hydrofluorocarbons (HFCs) and hydrocarbons (normal pentane, iso-pentane and cyclopentane) were introduced to replace HCFC-141b. However, none of these alternatives can match the performance of HCFC-141b in terms of handling, economics, and overall final product performance. In particular, the fire performance of hydrocarbon-based foams cannot reach the performance previously achieved with HCFC-141b. Trans-1,2-dichloroethylene is a liquid at room temperature (b.p. 48°). It does not deplete the ozone layer, and it has very low global warming potential (GWP) because it has very short atmospheric lifetime. The authors have recently reported that when trans-1,2-dichloroethylene is used in urethane foams with hydrocarbons, it could improve the fire performance of the foams based on a small-scale fire test (Mobil 45). They report phys. properties such as dimensional stability and compressive strength of hydrocarbon/trans-1,2-dichloroethylene-based foams. They have also extended the studies of the use of trans-1,2-dichloroethylene and they report on the fire performance and phys. properties of HFC blown urethane foams incorporating trans-1,2-dichloroethylene.

ST hydrocarbon trans dichloroethylene blown urethane foam flammability improved; hydrofluorocarbon trans dichloroethylene blown urethane foam flammability improved

IT Polyurethanes, uses
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Blowing agents
Compressive strength
Fireproofing agents
Flammability
Thermal insulation foams
(nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Polymer degradation
(thermal; nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT 156-60-5, trans-1,2-Dichloroethylene
RL: MOA (Modifier or additive use); USES (Uses)
(nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT 192648-01-4P, Mondur 489-STEPANPol PS 2352 copolymer 439592-42-4P, DESMODUR 44V70-STEPANPOL PS 2412 copolymer
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(nonozone depleting blowing agents with trans-1,2-dichloroethylene for

improving fire performance of urethane foam)
IT 78-78-4, Isopentane 109-66-0, n-Pentane, uses 287-92-3, Cyclopentane
406-58-6, HFC-365mfc 460-73-1, HFC-245fa 745816-72-2, Hydrosol
Pentane 15
RL: TEM (Technical or engineered material use); USES (Uses)
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for
 improving fire performance of urethane foam)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; Standard Test Method for Heat and Visible Smoke Release Rates for
Materials and Products Using an Oxygen Consumption Calorimeter ASTM E 1354
(2) Berrier, R; Polyurethanes Expo '98 1998, P5 CAPLUS
(3) Bob, J; The Earth Technologies Forum 1999, P273
(4) Dournel, P; Polyurethanes Expo '2001 2001, P325 CAPLUS
(5) Francesca, P; Environmental and thermal insulation requirements for
polyurethane rigid foams for the professional cold chain industry 2001
(6) William, D; The Earth Technologies Forum 1998, P270
(7) Wu, J; Polyurethanes Conference Proceeding 2003, P144

=> d his

(FILE 'HOME' ENTERED AT 15:38:57 ON 03 SEP 2008)

FILE 'CAPLUS' ENTERED AT 15:43:31 ON 03 SEP 2008
E US 20080061272/PN

L1 1 S E3
S 156-60-5/REG# AND 460-73-1/REG#

FILE 'REGISTRY' ENTERED AT 15:45:31 ON 03 SEP 2008
L2 1 S 460-73-1/RN

FILE 'CAPLUS' ENTERED AT 15:45:31 ON 03 SEP 2008
L3 880 S L2

FILE 'REGISTRY' ENTERED AT 15:45:32 ON 03 SEP 2008
L4 1 S 156-60-5/RN

FILE 'CAPLUS' ENTERED AT 15:45:32 ON 03 SEP 2008
L5 3172 S L4
L6 28 S L5 AND L3
E CARON LAURENT/AU
L7 45 S E3 OR E4
L8 3 S L6 AND L7

=> d 16 1-28 all

L6 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2008:973919 CAPLUS
ED Entered STN: 14 Aug 2008
TI Nonflammable cleaning compositions comprising fluorinated compounds for
solid surface and flushing refrigeration apparatus
IN Marhold, Michael; Rau, Helge; Boerner, Karsten; Meurer, Christoph
PA Solvay Fluor G.m.b.H., Germany
SO PCT Int. Appl., 23pp.
CODEN: PIXXD2
DT Patent
LA English
CC 46-6 (Surface Active Agents and Detergents)
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|-------|-------|-----------------|-------|
| ----- | ----- | ----- | ----- | ----- |

| | | | | | |
|---------|---|----|----------|-----------------|----------|
| PI | WO 2008095881 | A1 | 20080814 | WO 2008-EP51307 | 20080204 |
| | W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| PRAI EP | 2007-101826 | A | 20070206 | | |
| | EP 2007-101835 | A | 20070206 | | |

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

| | | |
|---------------|------|--|
| WO 2008095881 | IPCI | C11D0007-50 [I,A]; B01D0012-00 [I,A]; C23G0005-028
[I,A]; C23G0005-00 [I,C*]; H01L0021-02 [I,A] |
|---------------|------|--|

AB The non-flammable compns. comprises fluorinated compds. selected from hydro fluoroalkanes, hydrofluoroalkenes, partially or perfluorinated aromatic compds., hydrofluoroethers or fluoroketones, 1,2-dichloroethylene, especially trans-1,2-dichloroethylene, and a stabilizer. These non-flammable compns. preferably containing 1,1,1,3,3-pentafluorobutane, can be used especially as solvents for cleaning and defluxing electronic components and for degreasing metals. The compns. further may comprise a propellant, e.g. 1,1,1,2-tetrafluoroethane. These compns. are especially suitable as flushing agent.

ST pentafluorobutane tetrafluoroethane flushing agent refrigeration app

IT Detergents

(cleaning compns.; nonflammable cleaning compns. comprising fluorinated compds. for solid surface and flushing refrigeration apparatus)

IT Alkanes

Alkenes

Ketones

RL: NUU (Other use, unclassified); USES (Uses)

(fluoro; nonflammable cleaning compns. comprising fluorinated compds. for solid surface and flushing refrigeration apparatus)

IT Ethers

RL: NUU (Other use, unclassified); USES (Uses)

(fluoroalkyl; nonflammable cleaning compns. comprising fluorinated compds. for solid surface and flushing refrigeration apparatus)

IT Degreasing agents

Printed circuit boards

Refrigerating apparatus

(nonflammable cleaning compns. comprising fluorinated compds. for solid surface and flushing refrigeration apparatus)

IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6, HFC 365mfcc

460-73-1, HFC 245fa 811-97-2, HFC 134a 138495-42-8, HFC

43-10mee

RL: NUU (Other use, unclassified); USES (Uses)

(nonflammable cleaning compns. comprising fluorinated compds. for solid surface and flushing refrigeration apparatus)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Allied Signal Inc; WO 9935209 A 1999 CAPLUS

(2) Du Pont; WO 0017301 A 2000 CAPLUS

(3) Du Pont; WO 2005118754 A 2005 CAPLUS

(4) Illinois Tool Works; EP 1403361 A 2004

(5) Minnesota Mining & Mf G; WO 9837163 A 1998 CAPLUS

(6) Nappa Mario J; US 20060266975 A1 2006

(7) Pham; WO 02099006 A 2002 CAPLUS
(8) Solvay; EP 0653484 A1 1995 CAPLUS

L6 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2008:743878 CAPLUS
DN 149:55272
ED Entered STN: 20 Jun 2008
TI Expanded and extruded biodegradable and reduced emission foams made with methyl formate-based blowing agents
IN Handa, Y. Paul
PA USA
SO U.S. Pat. Appl. Publ., 16pp.
CODEN: USXXCO
DT Patent
LA English
INCL 052158000; 052179000
CC 38-3 (Plastics Fabrication and Uses)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----|--|------|----------|-----------------|----------|
| PI | US 20080146686 | A1 | 20080619 | US 2007-955034 | 20071212 |
| | WO 2008076755 | A1 | 20080626 | WO 2007-US87231 | 20071212 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,
GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM | | | | |

PRAI US 2006-869932P P 20061214

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|----------------|--|--|
| US 20080146686 | INCL | 052158000; 052179000 |
| | IPCI | C08J0009-228 [I,A]; C08J0009-00 [I,C*] |
| WO 2008076755 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A] |
| AB | Expanded and extruded biodegradable polymer foams are obtained using biodegradable polymers and environmentally benign non-VOC Me formate as a blowing agent. The blowing agent can be a blend further including at least one co-blowing agent, preferably an environmentally friendly species (e.g., non-VOC), which is either a phys. co-blowing agent (e.g. an inorg. agent, a hydrocarbon, a halogenated hydrocarbon, a hydrocarbon with polar, functional group(s), water or any combination thereof), or a chemical co-blowing agent, or combinations thereof. The blowing agent blend can include any combination of Me formate and one or more co-blowing agents. The polymer foam can include a biodegradable polymer or its blends with other biodegradable polymers or conventional (non-biodegradable) polymers. The Me formate-based blowing agent blends produce stable foams for various applications, including containers, packaging systems, as well as for insulation and protective cushioning. Processes for the preparation of such foams are also provided. | |
| ST | expanded extruded biodegradable foam methyl formate blowing agent | |
| IT | Alcohols, uses | |
| | RL: NUU (Other use, unclassified); USES (Uses)
(aliphatic, co-blowing agent; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents) | |
| IT | Acrylic polymers, uses | |

Polyolefins
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(biodegradable polymer-blends; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Acetals

Amines, uses

Carbonates, uses

Esters, uses

Ethers, uses

Hydrocarbons, uses

Ketones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(co-blowing agent; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Biodegradable materials

Blowing agents
(expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Polyesters, uses

Polyoxyalkylenes, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Extruded plastics

Plastic foams
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(halo, co-blowing agent; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Polyesters, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hydroxycarboxylic acid-based; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Polymer blends
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(non-biodegradable polymer- biodegradable polymer; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT Plastics, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(thermoplastics, non-biodegradable polymer, biodegradable polymer-blends; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT 74-84-0, Ethane, uses 74-98-6, Propane, uses 75-28-5, Isobutane 75-37-6, HFC-152a 78-78-4, Isopentane 106-97-8, n-Butane, uses 115-10-6, Dimethylether 124-38-9, Carbon dioxide, uses 156-60-5 , trans-1,2-Dichloroethylene 460-73-1, HFC-245fa 811-97-2, HFC-134a
RL: NUU (Other use, unclassified); USES (Uses)

(co-blowing agent; expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT 107-31-3, Methyl formate
 RL: NUU (Other use, unclassified); USES (Uses)
 (expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

IT 9004-35-7D, Acetyl cellulose, reaction products with 9005-25-8, Starch, uses 9005-25-8D, Starch, derivs. 24980-41-4, Poly(caprolactone) 25248-42-4, Poly(caprolactone) 25322-68-3, Poly(ethylene glycol) 26009-03-0, Poly(glycolic acid) 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Poly(lactic acid) 26124-68-5, Poly(glycolic acid) 26780-50-7, Lactide-glycolide copolymer 60961-73-1, Ecoflex
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (expanded and extruded biodegradable and reduced emission foams made with Me formate-based blowing agents)

L6 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2007:994049 CAPLUS
 DN 147:302440
 ED Entered STN: 06 Sep 2007
 TI Reduced-VOC and non-VOC blowing agents for making expanded and extruded thermoplastic alkenyl aromatic polymer foams
 IN Handa, Y. Paul; Francis, Gary A.; Castner, Glenn C.; Zafar, Mohammad
 PA USA
 SO U.S. Pat. Appl. Publ., 27pp., Cont.-in-part of U.S. Ser. No. 367,652.
 CODEN: USXXCO
 DT Patent
 LA English
 INCL 521079000
 CC 38-3 (Plastics Fabrication and Uses)
 FAN.CNT 5

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | US 20070208094 | A1 | 20070906 | US 2007-680170 | 20070228 |
| | US 20060052464 | A1 | 20060309 | US 2004-934832 | 20040903 |
| | US 7307105 | B2 | 20071211 | | |
| | US 20060047009 | A1 | 20060302 | US 2004-16312 | 20041217 |
| | US 7312253 | B2 | 20071225 | | |
| | US 20060052465 | A1 | 20060309 | US 2005-122158 | 20050503 |
| | US 20060052466 | A1 | 20060309 | US 2005-151814 | 20050613 |
| | CA 2579337 | A1 | 20060316 | CA 2005-2579337 | 20050901 |
| | EP 1802688 | A1 | 20070704 | EP 2005-793425 | 20050901 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| | JP 2008512509 | T | 20080424 | JP 2007-530314 | 20050901 |
| | US 20060211782 | A1 | 20060921 | US 2006-367652 | 20060303 |
| | MX 2007022580 | A | 20070516 | MX 2007-2580 | 20070302 |
| PRAI | US 2004-934832 | A2 | 20040903 | | |
| | US 2004-16312 | A2 | 20041217 | | |
| | US 2005-122158 | A2 | 20050503 | | |
| | US 2005-151814 | A2 | 20050613 | | |
| | US 2006-367652 | A2 | 20060303 | | |
| | WO 2005-US30983 | W | 20050901 | | |

| CLASS | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------|----------------|-------|--------------------------------------|
| | US 20070208094 | INCL | 521079000 |
| | | IPCI | C08J0009-00 [I,A] |
| | | IPCR | C08J0009-00 [I,C]; C08J0009-00 [I,A] |
| | | NCL | 521/079.000 |

| | | |
|----------------|--|---|
| | ECLA | C08J009/14D+L25/04; C08J009/12F+L25/04;
C08J009/14P+L25/04 |
| US 20060052464 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A]; C08J0009-00
[I,A]; C08J0009-14 [I,A] |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| | NCL | 521/079.000; 521/098.000; 521/142.000; 521/097.000;
521/146.000 |
| US 20060047009 | IPCI | C08J0009-00 [I,A]; C08J0009-00 [I,A] |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] |
| | NCL | 521/079.000; 521/098.000; 521/142.000; 521/146.000 |
| US 20060052465 | ECLA | C08J009/14P+L25/04; C08J009/12F+L25/04 |
| | IPCI | C08J0009-00 [I,A] |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] |
| | NCL | 521/079.000 |
| US 20060052466 | IPCI | C08J0009-00 [I,A] |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] |
| | NCL | 521/099.000 |
| CA 2579337 | IPCI | C08J0009-14 [I,A]; C08J0009-228 [I,A]; C08J0009-00
[I,C*]; C08L0025-06 [I,A]; C08L0025-00 [I,C*] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08J0009-228
[I,A]; C08L0025-00 [I,C]; C08L0025-06 [I,A] |
| EP 1802688 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A] |
| | ECLA | C08J0009/14D+L25/04; C08J009/12F+L25/04;
C08J009/14P+L25/04 |
| JP 2008512509 | IPCI | C08J0009-14 [I,A]; C08J0009-00 [I,C*] |
| | FTERM | 4F074/AA32; 4F074/AC32; 4F074/BA32; 4F074/BA33;
4F074/BA34; 4F074/BA35; 4F074/BA36; 4F074/BA37;
4F074/BA38; 4F074/BA39; 4F074/BA53; 4F074/BA67;
4F074/BA72; 4F074/BA73; 4F074/BA74; 4F074/BA75;
4F074/BA84; 4F074/CA22; 4F074/CA24; 4F074/CC03X;
4F074/CC04X; 4F074/CC04Y; 4F074/CC05Z; 4F074/DA02;
4F074/DA03; 4F074/DA12; 4F074/DA14; 4F074/DA23;
4F074/DA32; 4F074/DA33; 4F074/DA34 |
| US 20060211782 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-00 [I,A]; C08J0009-14 [I,A] |
| | NCL | 521/079.000; 521/098.000; 521/142.000 |
| MX 200702580 | IPCI | C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| AB | A blowing agent blend for making thermoplastic polymer foams includes Me formate. The blowing agent blend can further comprise ≥ 1 co-blowing agent. The co-blowing agent is either a phys. co-blowing agent (e.g. an inorg. agent, a hydrocarbon, a halogenated hydrocarbon, a hydrocarbon with polar, functional group(s), H ₂ O or any combination), or a chemical co-blowing agent, or combinations and the thermoplastic polymer foam can be an alkenyl aromatic polymer foam, e.g. a polystyrene foam. The Me formate-based blowing agent blends produce dimensionally stable foams that have improved resistance to flame spread. A process for the preparation of such foams is also provided. | |
| ST | blowing agent Me formate thermoplastic foam reduced VOC; phys coblowing agent carbon dioxide thermoplastic foam reduced VOC | |
| IT | Thermal insulation foams
(board or sheet; low d. expanded and extruded alkenyl aromatic polymer foams prepared with Me formate blowing agent blend) | |
| IT | Extruded plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(foam; low d. expanded and extruded alkenyl aromatic polymer foams prepared with Me formate blowing agent blend) | |
| IT | Blowing agents
(low d. expanded and extruded alkenyl aromatic polymer foams prepared with Me formate blowing agent blend) | |
| IT | Plastic foams
RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastic; low d. expanded and extruded alkenyl aromatic polymer | |

foams prepared with Me formate blowing agent blend)
 IT 75-68-3, HCFC 142b 115-10-6, Dimethyl ether 156-60-5,
 trans-1,2-Dichloroethylene 460-73-1, HFC 245fa 811-97-2, HFC
 134a 7732-18-5, Water, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (co-blown agent; low d. expanded and extruded alkenyl aromatic polymer
 foams prepared with Me formate blowing agent blend)
 IT 74-84-0, Ethane, uses 74-98-6, Propane, uses 75-28-5, Isobutane
 75-37-6, HFC 152a 78-78-4, Isopentane 106-97-8, Butane, uses
 124-38-9, Carbon dioxide, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (co-blown agent; low d. expanded and extruded alkenyl aromatic polymer
 foams prepared with Me formate blowing agent blend)
 IT 107-31-3, Methyl formate
 RL: NUU (Other use, unclassified); USES (Uses)
 (low d. expanded and extruded alkenyl aromatic polymer foams prepared with
 Me formate blowing agent blend)
 IT 9003-53-6, Polystyrene
 RL: POF (Polymer in formulation); USES (Uses)
 (low d. expanded and extruded alkenyl aromatic polymer foams prepared with
 Me formate blowing agent blend)

L6 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2007:561349 CAPLUS

DN 146:523109

ED Entered STN: 24 May 2007

TI Method of molding rigid polyurethane foams with enhanced thermal conductivity

IN De Vos, Hans A. G.; Parenti, Vanni

PA Dow Global Technologies Inc., USA

SO PCT Int. Appl., 33pp.

CODEN: PIXKD2

DT Patent

LA English

CC 38-3 (Plastics Fabrication and Uses)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | WO 2007058793 | A1 | 20070524 | WO 2006-US42979 | 20061103 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GE,
GH, GM, GT, HH, HR, RU, ID, IL, IN, IS, JE, KE, KG, KM, KN,
KP, KR, KZ, LA, LC, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK,
MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO,
RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT,
TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG, BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM | | | | |
| AU | 2006315842 | A1 | 20070524 | AU 2006-315842 | 20061103 |
| CA | 2629090 | A1 | 20070524 | CA 2006-2629090 | 20061103 |
| EP | 1951777 | A1 | 20080806 | EP 2006-827462 | 20061103 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| KR | 2008077176 | A | 20080821 | KR 2008-714209 | 20080613 |
| PRAI | US 2005-736247P | P | 20051114 | | |
| | WO 2006-US42979 | W | 20061103 | | |

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

| | | |
|---------------|---|--|
| WO 2007058793 | IPCI | C08G0018-08 [I,A]; C08G0018-00 [I,C*]; C08J0009-12 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C08G0018-00 [I,C]; C08G0018-08 [I,A]; C08J0009-00 [I,C]; C08J0009-12 [I,A] |
| | ECLA | C08G018/76D2; C08G018/48A8; C08G018/48D; M08G; M08G |
| AU 2006315842 | IPCI | C08G0018-00 [I,C]; C08G0018-08 [I,A]; C08J0009-00 [I,C]; C08J0009-12 [I,A] |
| | ECLA | C08G018/76D2; C08G018/48A8; C08G018/48D; M08G; M08G |
| CA 2629090 | IPCI | [I,A]; C08J0009-00 [I,C*] |
| EP 1951777 | IPCI | C08G0018-08 [I,A]; C08G0018-00 [I,C*]; C08J0009-12 [I,A]; C08J0009-00 [I,C*] |
| KR 2008077176 | IPCI | C08G0018-08 [I,A]; C08G0018-00 [I,C*]; C08J0009-12 [I,A]; C08J0009-00 [I,C*] |
| AB | The molded rigid polyurethane foam for application in appliance, has reduced thermal conductivity at d. 33-38 kg/m ³ . The molded rigid polyurethane foam is obtained by injecting into a closed mold cavity under reduced pressure a reaction mixture at packing factor 1.1-1.9, wherein the reaction mixture comprises(A) an organic polyisocyanate; (B) a phys. blowing agent, (C) a polyol composition containing ≥1 polyol with functionality ≥3 and hydroxyl number 200-800, (D) 0-2.5% water; (E) a catalyst and (F) auxiliary substances and/or additives. | |
| ST | polyurethane foam rigid reduced thermal cond | |
| IT | Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(chlorofluorocarbons, blowing agent; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro, blowing agent; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Polyurethanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(foam; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Appliances
Blowing agents
Polymerization catalysts
Thermal insulators
(method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Molded plastics, uses
Plastic foams
RL: TEM (Technical or engineered material use); USES (Uses)
(method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Polyurethanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polyoxyalkylene-, foam; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | Polyurethanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, foam; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance) | |
| IT | 78-78-4, Isopentane 106-97-8, n-Butane, uses 107-31-3, Methyl formate 110-82-7, Cyclohexane, uses 156-60-5 287-92-3, Cyclopentane 406-58-6, HFC 365mfc 431-89-0, HFC 227 460-73-1, HFC 245fa | |

7732-18-5, Water, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (blowing agent; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance)

IT 936846-36-5P 937040-61-4P 937040-62-5P 937040-63-6P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (foam; method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance)

IT 90-72-2, Dabco TMR 30 98-94-2, Polycat 8 3030-47-5, Polycat 5
 RL: CAT (Catalyst use); USES (Uses)
 (method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance)

IT 109-66-0, n-Pentane, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (method of molding rigid polyurethane foams with enhanced thermal conductivity for appliance)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Elastogran Gmbh; EP 0708127 A2 1996 CAPLUS
 (2) Lunardon Gianflavio; US 5530033 A 1996 CAPLUS
 (3) Slaats, M; US 3970732 A1 1976

L6 ANSWER 5 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2007:17507 CAPLUS
 DN 146:102023
 ED Entered STN: 05 Jan 2007
 TI Process for preparation of molded polyurethane articles
 IN Enaux, Vincent; Debien, Christian Geert Marie Ghislain
 PA Arkema, Fr.
 SO Fr. Demande, 11pp.
 CODEN: FRXXBL
 DT Patent
 LA French
 CC 38-3 (Plastics Fabrication and Uses)
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| PI FR 2887889 | A1 | 20070105 | FR 2005-6626 | 20050629 |
| FR 2887889 | B1 | 20070831 | | |
| WO 2007003726 | A1 | 20070111 | WO 2006-FR1116 | 20060518 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM | | | | |
| EP 1904562 | A1 | 20080402 | EP 2006-764642 | 20060518 |
| R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| CN 101223220 | A | 20080716 | CN 2006-80026268 | 20080118 |
| PRAI FR 2005-6626 | A | 20050629 | | |
| WO 2006-FR1116 | W | 20060518 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|---|---|
| FR 2887889 | IPCI | C08G0018-08 [I,A]; C08G0018-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-34 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C08G0018-00 [I,C]; C08G0018-08 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08J0009-34 [I,A] |
| | ECLA | C08J009/34+L75/04; C08J009/14P+L75/04 |
| WO 2007003726 | IPCI | C08J0009-14 [I,A]; C08J0009-34 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08J0009-34 [I,A] |
| | ECLA | C08J009/34+L75/04; C08J009/14P+L75/04 |
| EP 1904562 | IPCI | C08J0009-14 [I,A]; C08J0009-34 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08J0009-34 [I,A] |
| CN 101223220 | IPCI | C08J0009-14 [I,A]; C08J0009-34 [I,A]; C08J0009-00 [I,C*] |
| AB | The invention relates to a method of preparation of articles molded out of polyurethane, which have a cellular core and a skin layer with a certain hardness, and to foams prepared by this method. The invention also has an aim at premixing a functional composition which is reactive with isocyanates. | |
| ST | polyurethane foam molding | |
| IT | Hydrocarbons, uses | |
| | RL: NUU (Other use, unclassified); USES (Uses)
(fluoro, blowing agent; process for preparation of molded polyurethane articles) | |
| IT | Blowing agents
(process for preparation of molded polyurethane articles) | |
| IT | Polyurethanes, uses | |
| | RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(process for preparation of molded polyurethane articles) | |
| IT | Plastic foams | |
| | RL: TEM (Technical or engineered material use); USES (Uses)
(process for preparation of molded polyurethane articles) | |
| IT | 156-60-5 406-58-6, 1,1,1,3,3-Pentafluorobutane 431-89-0,
1,1,1,2,3,3-Heptafluoropropane 460-73-1, 1,1,1,3,3-Pentafluoropropane | |
| | RL: NUU (Other use, unclassified); USES (Uses)
(blowing agent; process for preparation of molded polyurethane articles) | |
| IT | 917967-44-3P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(process for preparation of molded polyurethane articles) | |
| RE.CNT | 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD | |
| RE | (1) Atofina Chemicals Inc; EP 1435371 A 2004 CAPLUS
(2) Bogdan, M; US 2003050356 A1 2003 CAPLUS
(3) Bogdan, M; US 6764990 B1 2004 CAPLUS
(4) Honeywell International Inc; WO 03078539 A 2003 CAPLUS
(5) Wu, J; US 6793845 B1 2004 CAPLUS | |
| L6 | ANSWER 6 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN | |
| AN | 2006:1205710 CAPLUS | |
| DN | 145:489980 | |
| ED | Entered STN: 16 Nov 2006 | |
| TI | Making rigid urethane-modified polyisocyanurate foams, compositions, and foam fabrication | |
| IN | Kuester, Joern Matthias | |
| PA | Huntsman International LLC, USA | |
| SO | Eur. Pat. Appl., 10pp. | |
| | CODEN: EPXXDW | |
| DT | Patent | |

LA English
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 38

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1721919 | A1 | 20061115 | EP 2005-103827 | 20050509 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU | | | | |
| PRAI | EP 2005-103827 | | 20050509 | | |

CLAS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|--|-------|--|
| EP | 1721919 | IPCI | C08G0018-09 [I,A]; C08G0018-79 [I,A]; C08G0018-76 [I,A]; C08G0018-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*] |
| | | IPCR | C08G0018-00 [I,C]; C08G0018-09 [I,A]; C08G0018-76 [I,A]; C08G0018-79 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| | | ECLA | C08G018/09D; C08G018/40A2 |
| AB | Rigid urethane-modified polyisocyanurate foams are made at NCO index 300-600% from polyisocyanates and polyfunctional isocyanate-reactive components in the presence of a hydrocarbon or hydrofluorocarbon blowing agent and trans-1,2-dichloroethylene, and trimerization catalyst. | | |
| ST | polyurethane polyisocyanate rigid foam blowing agent | | |
| IT | Thermal insulators
(boards; making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro; making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Blowing agents | | |
| | Fire-resistant materials | | |
| | Laminated materials
(making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Plastic foams | | |
| | Polyesters, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Polyurethanes, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polyether-polyisocyanurate-; making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Polyisocyanurates
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polyether-polyurethane-; making rigid urethane-modified polyisocyanurate foams with good green adhesion) | | |
| IT | Polyethers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polyisocyanurate-polyurethane-; making rigid | | |

urethane-modified polyisocyanurate foams with good green adhesion)
 IT Polyesters, preparation
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyether-polyisocyanurate-polyurethane-; making rigid
 urethane-modified polyisocyanurate foams with good green adhesion)
 IT 156-60-5, trans-1,2-Dichloroethylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (for improved adhesion; making rigid urethane-modified polyisocyanurate foams with good green adhesion)
 IT 9016-87-9DP, Polymeric MDI, polyester-polyether-polyisocyanurate derivative
 25038-59-9DP, hydroxy-terminated, polyisocyanurate derivative
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (making rigid urethane-modified polyisocyanurate foams with good green adhesion)
 IT 78-78-4, Isopentane 109-66-0, n-Pentane, uses 287-92-3, Cyclopentane
 460-73-1, HFC 245fa
 RL: NUU (Other use, unclassified); USES (Uses)
 (making rigid urethane-modified polyisocyanurate foams with good green adhesion)
 RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
 (1) Atofina Chemicals Inc; EP 1382636 A 2004 CAPLUS
 (2) Atofina Chemicals Inc; EP 1435371 A 2004 CAPLUS
 (3) Bogdan, M; WO 02099006 A 2002 CAPLUS
 (4) Wu, J; JOURNAL OF CELLULAR PLASTICS 2005, V41(1), P15 CAPLUS

L6 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2006:978982 CAPLUS
 DN 145:357937
 ED Entered STN: 21 Sep 2006
 TI Reduced-VOC and non-VOC blowing agents for making expanded and extruded thermoplastic foams
 IN Handa, Yash Paul; Francis, Gary A.
 PA USA
 SO U.S. Pat. Appl. Publ., 18pp., Cont.-in-part of U.S. Ser. No. 151,814.
 CODEN: USXXCO
 DT Patent
 LA English
 INCL 52107900; 52109800; 521142000
 CC 38-3 (Plastics Fabrication and Uses)
 FAN.CNT 5

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| PI | US 20060211782 | A1 | 20060921 | US 2006-367652 | 20060303 |
| | US 20060052464 | A1 | 20060309 | US 2004-934832 | 20040903 |
| | US 7307105 | B2 | 20071211 | | |
| | US 20060047009 | A1 | 20060302 | US 2004-16312 | 20041217 |
| | US 7312253 | B2 | 20071225 | | |
| | US 20060052465 | A1 | 20060309 | US 2005-122158 | 20050503 |
| | US 20060052466 | A1 | 20060309 | US 2005-151814 | 20050613 |
| | CA 2579337 | A1 | 20060316 | CA 2005-2579337 | 20050901 |
| | EP 1802688 | A1 | 20070704 | EP 2005-793425 | 20050901 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| | JP 2008512509 | T | 20080424 | JP 2007-530314 | 20050901 |
| | US 20070208094 | A1 | 20070906 | US 2007-680170 | 20070228 |
| | MX 200702580 | A | 20070516 | MX 2007-2580 | 20070302 |
| PRAI | US 2004-934832 | A2 | 20040903 | | |
| | US 2004-16312 | A2 | 20041217 | | |
| | US 2005-122158 | A2 | 20050503 | | |

| | | |
|-----------------|----|----------|
| US 2005-151814 | A2 | 20050613 |
| WO 2005-US30983 | W | 20050901 |
| US 2006-367652 | A2 | 20060303 |

| CLASS | | | |
|----------------|--|--|--|
| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | |
| US 20060211782 | INCL | 521079000; 521098000; 521142000 | |
| | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A] | |
| | IPCR | C08J0009-00 [I,C]; C08J0009-00 [I,A]; C08J0009-14 [I,A] | |
| | NCL | 521/079.000; 521/098.000; 521/142.000 | |
| US 20060052464 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A]; C08J0009-00 [I,A]; C08J0009-14 [I,A] | |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A] | |
| | NCL | 521/079.000; 521/098.000; 521/142.000; 521/097.000; 521/146.000 | |
| US 20060047009 | IPCI | C08J0009-00 [I,A]; C08J0009-00 [I,A] | |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] | |
| | NCL | 521/079.000; 521/098.000; 521/142.000; 521/146.000 | |
| US 20060052465 | ECLA | C08J0009/14P+L25/04; C08J009/12F+L25/04 | |
| | IPCI | C08J0009-00 [I,A] | |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] | |
| | NCL | 521/079.000 | |
| US 20060052466 | IPCI | C08J0009-00 [I,A] | |
| | IPCR | C08J0009-00 [I,A]; C08J0009-00 [I,C] | |
| | NCL | 521/099.000 | |
| CA 2579337 | IPCI | C08J0009-14 [I,A]; C08J0009-228 [I,A]; C08J0009-00 [I,C*]; C08L0025-06 [I,A]; C08L0025-00 [I,C*] | |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08J0009-228 [I,A]; C08L0025-00 [I,C]; C08L0025-06 [I,A] | |
| EP 1802688 | IPCI | C08J0009-00 [I,A]; C08J0009-14 [I,A] | |
| | ECLA | C08J009/14D+L25/04; C08J009/12F+L25/04; C08J009/14P+L25/04 | |
| JP 2008512509 | IPCI | C08J0009-14 [I,A]; C08J0009-00 [I,C*] | |
| | FTERM | 4F074/AA32; 4F074/AC32; 4F074/BA32; 4F074/BA33; 4F074/BA34; 4F074/BA35; 4F074/BA36; 4F074/BA37; 4F074/BA38; 4F074/BA39; 4F074/BA53; 4F074/BA67; 4F074/BA72; 4F074/BA73; 4F074/BA74; 4F074/BA75; 4F074/BA84; 4F074/CA22; 4F074/CA24; 4F074/CC03X; 4F074/CC04X; 4F074/CC04Y; 4F074/CC05Z; 4F074/DA02; 4F074/DA03; 4F074/DA12; 4F074/DA14; 4F074/DA23; 4F074/DA32; 4F074/DA33; 4F074/DA34 | |
| US 20070208094 | IPCI | C08J0009-00 [I,A] | |
| | IPCR | C08J0009-00 [I,C]; C08J0009-00 [I,A] | |
| | NCL | 521/079.000 | |
| | ECLA | C08J009/14D+L25/04; C08J009/12F+L25/04; C08J009/14P+L25/04 | |
| MX 200702580 | IPCI | C08J0009-00 [I,C]; C08J0009-14 [I,A] | |
| AB | Low d. expanded and extruded thermoplastic polymer foams are obtained using an environmentally benign non-VOC and non-HAP (hazardous air pollutant) Me formate as a blowing agent. The blowing agent blend can further comprise ≥1 co-blown agent. The co-blowing agent is either a phys. co-blowing agent (e.g. an inorg. agent, a hydrocarbon, a halogenated hydrocarbon, a hydrocarbon with polar, functional group(s), water or any combination thereof), or a chemical co-blowing agent, or combinations thereof. Thus, a foam prepared by tandem extruding at 200° polystyrene having d. 1.05 g/cm ³ and melt flow rate 1.6 g/10 min at 200° containing 3.22 weight% (based on total composition) Me formate and 0.76 weight% CO ₂ (phys. co-blowing agent) and 0.5 weight% talc exhibits d. 5.6 lb/ft ³ , open cells content 5.6% and cell size 209 μ. | | |
| ST | blowing agent Me formate thermoplastic foam reduced VOC; phys coblowing agent carbon dioxide thermoplastic foam reduced VOC | | |
| IT | Extruded plastics | | |

RL: TEM (Technical or engineered material use); USES (Uses)
 (foam; low d. expanded and extruded thermoplastic polymer foams prepared
 with Me formate as a blowing agent)
 IT Blowing agents
 (low d. expanded and extruded thermoplastic polymer foams prepared with
 Me formate as a blowing agent)
 IT Plastic foams
 RL: TEM (Technical or engineered material use); USES (Uses)
 (thermoplastic; low d. expanded and extruded thermoplastic polymer
 foams prepared with Me formate as a blowing agent)
 IT 75-68-3, HCFC 142b 115-10-6, Dimethyl ether 156-60-5,
 trans-1,2-Dichloroethylene 460-73-1, HFC 245fa 811-97-2, HFC
 134a 7732-18-5, Water, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (co-blowing agent; low d. expanded and extruded thermoplastic polymer
 foams prepared with Me formate as a blowing agent)
 IT 74-84-0, Ethane, uses 74-98-6, Propane, uses 75-28-5, Isobutane
 75-37-6, HFC 152a 78-78-4, Isopentane 106-97-8, Butane, uses
 124-38-9, Carbon dioxide, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (co-blowing agent; low d. expanded and extruded thermoplastic polymer
 foams prepared with Me formate as a blowing agent)
 IT 107-31-3, Methyl formate
 RL: NUU (Other use, unclassified); USES (Uses)
 (low d. expanded and extruded thermoplastic polymer foams prepared with
 Me formate as a blowing agent)
 IT 9003-53-6, Polystyrene
 RL: POF (Polymer in formulation); USES (Uses)
 (low d. expanded and extruded thermoplastic polymer foams prepared with
 Me formate as a blowing agent)

L6 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2006:849937 CAPLUS
 DN 145:248838
 ED Entered STN: 25 Aug 2006
 TI Non-flammable composition additives containing trans-1,2-dichloroethylene
 for use in polymers
 IN Latil, Laurent; Enaux, Vincent
 PA Arkema, Fr.
 SO Fr. Demande, 11pp.
 CODEN: FRXXBL
 DT Patent
 LA French
 CC 23-3 (Aliphatic Compounds)
 Section cross-reference(s): 37
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----|--|------|----------|-----------------|----------|
| PI | FR 2882358 | A1 | 20060825 | FR 2005-1832 | 20050223 |
| | FR 2882358 | B1 | 20070427 | | |
| | CA 2597778 | A1 | 20060831 | CA 2006-2597778 | 20060203 |
| | WO 2006090042 | A1 | 20060831 | WO 2006-FR252 | 20060203 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MC, MK, MN, MW, MX,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW | | | | |
| RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, | | | | |

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM
 EP 1851301 A1 20071107 EP 2006-709241 20060203
 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR
 CN 101120081 A 20080206 CN 2006-80005100 20070816
 PRAI FR 2005-1832 A 20050223
 WO 2006-FR252 W 20060203

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|---|-------|---|
| FR 2882358 | | IPCI | C07C0021-073 [I,A]; C07C0021-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C]; C11D0007-50 [I,A]; C08L0075-04 [I,A]; C08L0075-00 [I,C*] |
| | | IPCR | C07C0021-00 [I,C]; C07C0021-073 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A]; C08L0075-04 [I,A]; C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C019-08; C07C021/073; C08J009/14H2; C08J009/14H2+L75/04; C08J009/14H2C; C08J009/14H2F; C08J009/14P; C11D007/50A6; C23G005/028D; M11D; T05K |
| CA 2597778 | | IPCI | C07C0019-08 [I,A]; C07C0019-00 [I,C*]; C07C0021-073 [I,A]; C07C0021-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0019-00 [I,C]; C07C0019-08 [I,A]; C07C0021-00 [I,C]; C07C0021-073 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| | | IPCR | C07C0019-08 [I,A]; C07C0019-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0019-08 [I,A]; C07C0021-00 [I,C*]; C07C0021-073 [I,A]; C07C0021-00 [I,C*] |
| | | ECLA | C07C019/08; C07C021/073; C08J009/14H2; C08J009/14H2+L75/04; C08J009/14H2C; C08J009/14H2F; C08J009/14P; C11D007/50A6; C23G005/028D; M11D; T05K |
| WO 2006090042 | | IPCI | C11D0007-50 [I,A]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-00 [I,C*]; C07C0021-073 [I,A]; C07C0021-00 [I,C*] |
| | | ECLA | C07C019/08; C07C021/073; C08J009/14H2; C08J009/14H2+L75/04; C08J009/14H2C; C08J009/14H2F; C08J009/14P; C11D007/50A6; C23G005/028D; M11D; T05K |
| EP 1851301 | | IPCI | C11D0007-50 [I,A]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-00 [I,C*]; C07C0021-073 [I,A]; C07C0021-00 [I,C*] |
| | | IPCR | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0019-00 [I,C]; C07C0019-08 [I,A]; C07C0021-00 [I,C]; C07C0021-073 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| | | ECLA | C07C019/08; C07C021/073; C08J009/14H2; C08J009/14H2+L75/04; C08J009/14H2C; C08J009/14H2F; C08J009/14P; C11D007/50A6; C23G005/028D; M11D; T05K |
| CN 101120081 | | IPCI | C11D0007-50 [I,A]; C07C0019-08 [I,A]; C07C0019-00 [I,C*]; C07C0021-073 [I,A]; C08J0009-00 [I,C*]; C07C0021-00 [I,C*] |
| AB | A non-flammable composition additives containing trans-1,2-dichloroethylene, 1,1,1,3,3-pentafluoropropane, and 1,1,1,2-tetrafluoroethane, are described for use in polymers (e.g., Stepanpol PS2412). | | |
| ST | dichloroethylen pentafluoropropene tetrafluoroethane fireproofing compn polymer | | |
| IT | Alkanes, uses | | |
| | RL: TEM (Technical or engineered material use); USES (Uses)
(fluoro; in non-flammable composition additives containing trans-1,2-dichloroethylene for use in polymers) | | |
| IT | Fireproofing agents
(non-flammable composition additives containing trans-1,2-dichloroethylene for use in polymers) | | |

IT Alcohols, properties
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (polyhydric; non-flammable composition additives containing trans-1,2-dichloroethylene for use in polymers)
 IT Plastics, properties
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (thermoplastics; non-flammable composition additives containing trans-1,2-dichloroethylene for use in polymers)
 IT 460-73-1, 1,1,1,3,3-Pentafluoropropane 811-97-2,
 1,1,1,2-Tetrafluoroethane
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in non-flammable composition additives containing trans-1,2-dichloroethylene
 for use in polymers)
 IT 439592-40-2, Stepanopol PS 2412
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (non-flammable composition additives containing trans-1,2-dichloroethylene
 for
 use in polymers)
 IT 156-60-5, trans-1,2-Dichloroethylene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (non-flammable composition additives containing trans-1,2-dichloroethylene
 for
 use in polymers)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
 (1) Atofina Chemicals Inc; EP 1435371 A 2004 CAPLUS
 (2) Renault Daniel Auguste Marie Henri; US 3349039 A 1967 CAPLUS
 (3) Swan; US 6100229 A 2000 CAPLUS

L6 ANSWER 9 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2005:1313670 CAPLUS
 DN 144:54129
 ED Entered STN: 16 Dec 2005
 TI Azeotrope-like compositions of pentafluoropropane, methanol and dichloroethylene
 IN Hitters, Guillermo J.; Knopeck, Gary M.; Shankland, Ian R.; Singh, Rajiv R.
 PA Honeywell International Inc., USA
 SO U.S. Pat. Appl. Publ., 11 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C11D017-00
 ICS C11D017-08
 INCL 510415000
 CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|-------|----------|-----------------|----------|
| ----- | ----- | ----- | ----- | ----- |
| PI US 20050277565 | A1 | 20051215 | US 2004-867075 | 20040614 |
| US 7276471 | B2 | 20071002 | | |
| WO 2005123868 | A1 | 20051229 | WO 2005-US20817 | 20050614 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, | | | | |

| | | | | |
|---------------------|--|--|----------------|----------------------|
| | ZA, ZM, ZW | | | |
| RW: | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG | | | |
| EP 1756245 | A1 | 20070228 | EP 2005-760865 | 20050614 |
| R: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | |
| JP 20080502777 | T | 20080131 | JP 2007-516616 | 20050614 |
| PRAI US 2004-867075 | A | 20040614 | | |
| WO 2005-US20817 | W | 20050614 | | |
| CLASS | | | | |
| PATENT NO. | CLASS | PATENT FAMILY | CATEGORY | CLASSIFICATION CODES |
| ----- | ----- | ----- | ----- | ----- |
| US 20050277565 | ICM | C11D017-00 | | |
| | ICS | C11D017-08 | | |
| | INCL | 510415000 | | |
| | IPCI | C11D0007-50 [I,A] | | |
| | IPCR | C07C0021-00 [I,C*]; C07C0021-073 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0017-00 [I,C*]; C11D0017-00 [I,A]; C11D0017-08 [I,C*]; C11D0017-08 [I,A] | | |
| | NCL | 510/415.000; 510/411.000; 134/038.000; 134/040.000; 252/067.000; 510/177.000; 510/273.000; 510/410.000 | | |
| | ECLA | C08J0009/14P; C09K003/30; C09K005/04B4B | | |
| WO 2005123868 | IPCI | C09K0005-00 [ICM,7]; C09K0005-00 [ICM,7,C*]; C07C0021-073 [ICS,7]; C07C0021-00 [ICs,7,C*]; C09K0003-30 [ICs,7]; C08J0009-14 [ICs,7]; C08J0009-00 [ICs,7,C*] | | |
| | IPCR | C07C0021-00 [I,C*]; C07C0021-073 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0017-00 [I,C*]; C11D0017-00 [I,A]; C11D0017-08 [I,C*]; C11D0017-08 [I,A] | | |
| | ECLA | C08J0009/14P; C09K003/30; C09K005/04B4B | | |
| EP 1756245 | IPCI | C09K0005-04 [I,A]; C09K0005-00 [I,C*]; C07C0021-073 [I,A]; C07C0021-00 [I,C*]; C09K0003-30 [I,A]; C08J0009-14 [I,A]; C08J0009-00 [I,C*] | | |
| | IPCR | C09K0005-00 [I,C]; C09K0005-04 [I,A]; C07C0021-00 [I,C]; C07C0021-073 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-30 [I,C]; C09K0003-30 [I,A]; C11D0017-00 [I,C*]; C11D0017-00 [I,A]; C11D0017-08 [I,C*]; C11D0017-08 [I,A] | | |
| | ECLA | C08J0009/14P; C09K003/30; C09K005/04B4B | | |
| JP 20080502777 | IPCI | C09K0003-30 [I,A]; C09K0005-04 [I,A]; C09K0005-00 [I,C*]; C09K0003-00 [I,A]; F25B0001-00 [I,A] | | |
| | IPCR | C09K0003-30 [I,C]; C09K0003-30 [I,A]; C07C0021-00 [I,C*]; C07C0021-073 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-00 [I,C]; C09K0005-04 [I,A]; C09K0005-00 [I,C]; C09K0003-00 [I,A]; C11D0017-00 [I,C*]; C11D0017-00 [I,A]; C11D0017-08 [I,A]; F25B0001-00 [I,C*]; C11D0017-08 [I,A]; F25B0001-00 [I,C]; F25B0001-00 [I,A] | | |
| AB | The azeotrope-like compns. comprising 1,1,1,3,3-pentafluoropropane, methanol, and trans-1,2-dichloroethylene are suitable for use in aerosols, refrigerant compns., refrigeration systems, and blowing agent compns. | | | |
| ST | ternary azeotrope aerosol refrigerant blowing agent; pentafluoropropane methanol dichloroethylene azeotrope use | | | |
| IT | Aerosols
Blowing agents | | | |

Refrigerants
 (azeotrope-like compns. of pentafluoropropane, methanol and dichloroethylene)
 IT Solvents
 (ternary azeotrope; azeotrope-like compns. of pentafluoropropane, methanol and dichloroethylene)
 IT Azeotropes
 (ternary; azeotrope-like compns. of pentafluoropropane, methanol and dichloroethylene)
 IT 67-56-1, Methanol, uses 156-60-5, trans-1,2-Dichloroethylene
 460-73-1, 1,1,1,3,3-Pentafluoropropane
 RL: TEM (Technical or engineered material use); USES (Uses)
 (azeotrope-like compns. of pentafluoropropane, methanol and dichloroethylene)
 RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Anon; WO 02099006 2002 CAPLUS
 (2) Bartlett; US 5182040 A 1993 CAPLUS
 (3) Bartlett; US 5648017 A 1997 CAPLUS
 (4) Bogdan; US 20030050356 A1 2003
 (5) Bogdan; US 6790820 B2 2004 CAPLUS
 (6) Hitters; US 20030141481 A1 2003 CAPLUS
 (7) Knopeck; US 20030234380 A1 2003 CAPLUS
 (8) Knopeck; US 20040167053 A1 2004
 (9) Knopeck, G; Compositions of Pentafluoropropane 2003
 (10) Lund; US 5683974 A 1997 CAPLUS
 (11) Merchant; US 5116525 A 1992 CAPLUS
 (12) Swan; US 6100229 A 2000 CAPLUS
 (13) Westbrook; US 6852684 B1 2005 CAPLUS

L6 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2005:1073677 CAPLUS
 DN 143:349418

ED Entered STN: 07 Oct 2005
 TI Nonflammable composition useful as a solvent

IN Caron, Laurent; Lallier, Jean Pierre

PA Arkema, Fr.

SO Fr. Demande, 10 pp.
 CODEN: FRXXBL

DT Patent

LA French

IC ICM C11D007-50
 ICS C07C021-073

CC 48-11 (Unit Operations and Processes)
 Section cross-reference(s): 76

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---------------|---|----------|-----------------|----------|
| PI | FR 2868430 | A1 | 20051007 | FR 2004-3590 | 20040406 |
| | FR 2868430 | B1 | 20080801 | | |
| | WO 2005108542 | A1 | 20051117 | WO 2005-FR582 | 20050311 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
SV, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| | RW: | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG | | | |

| | | | | |
|--|----|----------|----------------|----------|
| EP 1733018 | A1 | 20061220 | EP 2005-739522 | 20050311 |
| R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| JP 2007531812 | T | 20071108 | JP 2007-506795 | 20050311 |
| US 2008061272 | A1 | 20080313 | US 2006-593943 | 20061006 |
| PRAI FR 2004-3590 | A | 20040406 | | |
| WO 2005-FR582 | W | 20050311 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | | |
|---------------|--|---|--|--|
| FR 2868430 | ICM | C11D007-50 | | |
| | ICS | C07C021-073 | | |
| | IPCI | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C07C0021-00
[I,C]; C07C0021-073 [I,A] | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C23G0005-00 [I,C*];
C23G0005-028 [I,A] | | |
| | ECLA | C11D007/50A6; C08J009/14H2; M11D | | |
| WO 2005108542 | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00
[ICS,7,C*]; C08J0009-14 [ICM,7]; C08J0009-00 [ICS,7,C*] | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] | | |
| | ECLA | C11D007/50A6; C08J009/14H2 | | |
| EP 1733018 | IPCI | C11D0007-50 [I,A]; C23G0005-028 [I,A]; C23G0005-00
[I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*] | | |
| | IPCR | C11D0007-50 [I,C]; C11D0007-50 [I,A]; C08J0009-00
[I,C]; C08J0009-14 [I,A]; C11D0007-22 [N,C*];
C11D0007-28 [N,A]; C23G0005-00 [I,C]; C23G0005-028
[I,A] | | |
| | ECLA | C11D007/50A6; C08J009/14H2 | | |
| JP 2007531812 | IPCI | C11D0007-30 [I,A]; C11D0007-22 [I,C*]; C11D0007-50
[I,A]; C23G0005-02 [I,A]; C23G0005-00 [I,C*] | | |
| | IPCR | C11D0007-22 [I,C]; C11D0007-30 [I,A]; C08J0009-00
[I,C*]; C08J0009-14 [I,A]; C11D0007-28 [N,A];
C11D0007-50 [I,C]; C11D0007-50 [I,A]; C23G0005-00
[I,C]; C23G0005-02 [I,A]; C23G0005-028 [I,A] | | |
| | FTERM | 4H003/DA01; 4H003/DA05; 4H003/DA12; 4H003/DC03;
4H003/ED13; 4H003/ED26; 4H003/FA01; 4H003/FA45;
4K053/RA08; 4K053/RA31 | | |
| US 2008061272 | IPCI | C09K0003-00 [I,A] | | |
| | NCL | 252/364.00; 252/182.120 | | |
| AB | The invention relates to a mixture containing trans-1,2-dichloroethylene 80-99 (preferably 95-98) and 1,1,1,3,3-pentafluoropropane 1-20 weight% (preferably 2-5%). The solvent is suitable for cleaning, degreasing, drying of solid surfaces, flux removal from printed circuits, dry cleaning of textiles, cleaning of refrigeration systems, as blowing agents for manufacture of polyurethane foams, as heat transfer fluids, and as propellants for aerosols. | | | |
| ST | dichloroethylene pentafluoropropane mixt solvent | | | |
| IT | Solvents | (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane mixture as) | | |
| IT | Blowing agents | | | |
| IT | Heat transfer agents | | | |
| IT | Propellants (sprays and foams) | | | |
| | (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture as) | | | |
| IT | Cleaning | | | |
| | Degreasing | | | |
| | (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture for) | | | |

IT Printed circuits
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture
 for cleaning and defluxing of)
 IT Refrigerating apparatus
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture
 for cleaning of)
 IT Dry cleaning
 (trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent mixture
 for dry cleaning of textiles)
 IT 156-60-5, trans-1,2-Dichloroethylene 460-73-1,
 1,1,1,3,3-Pentafluoropropane
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in trans-1,2-dichloroethylene-1,1,1,3,3-pentafluoropropane solvent
 mixture)
 RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Du Pont; WO 0017301 A 2000 CAPLUS
 (2) Gorton, E; US 5851977 A 1998 CAPLUS
 (3) Honeywell Int Inc; WO 03078539 A 2003 CAPLUS

L6 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2005:1073675 CAPLUS
 DN 143:327475
 ED Entered STN: 07 Oct 2005
 TI Blowing agent fire-resistant composition and its use.
 IN Caron, Laurent
 PA Arkema, Fr.
 SO Fr. Demande, 10 pp.
 CODEN: FRXXBL
 DT Patent
 LA French
 IC ICM 008J009-04
 ICS C09K003-30; C11D007-50; C08G018-06; C08G101-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 23

| PATENT NO. | | KIND | DATE | APPLICATION NO. | DATE |
|------------|---|------|----------|------------------|----------|
| PI | FR 2868427 | A1 | 20051007 | FR 2004-3591 | 20040406 |
| | FR 2868427 | B1 | 20060908 | | |
| | WO 2005108478 | A1 | 20051117 | WO 2005-FR629 | 20050316 |
| W: | AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MM, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML,
MR, NE, SN, TD, TG | | | | |
| EP | 1732977 | A1 | 20061220 | EP 2005-739691 | 20050316 |
| EP | 1732977 | B1 | 20080618 | | |
| R: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| CN | 1942513 | A | 20070404 | CN 2005-80011914 | 20050316 |
| JP | 2007531814 | T | 20071108 | JP 2007-506797 | 20050316 |
| AT | 398646 | T | 20080715 | AT 2005-739691 | 20050316 |
| KR | 2007015167 | A | 20070201 | KR 2006-720644 | 20061002 |
| US | 20080105848 | A1 | 20080508 | US 2006-593945 | 20061006 |
| PRAI | FR 2004-3591 | A | 20040406 | | |

| CLASS
PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------------|--|--|
| FR 2868427 | ICM | C08J009-04 |
| | ICS | C09K003-30; C11D007-50; C08G018-06; C08G101-00 |
| | IPCI | C08J0009-00 [I,C]; C08G0018-00 [I,C]; C09K0003-30 [I,C]; C11D0007-50 [I,C]; C08J0009-04 [I,A]; C08G0018-06 [I,A]; C08G0101-00 [N,A]; C09K0003-30 [I,A]; C11D0007-50 [I,A] |
| | IPCR | C09K0005-00 [I,C*]; C08J0009-14 [I,A]; C09K0005-04 [I,A] |
| | ECLA | C09K003/30; C09K005/04B4B |
| WO 2005108478 | IPCI | C08J0009-14 [ICM,7]; C08J0009-00 [ICM,7,C*] |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] |
| | ECLA | C08J009/14H2; C09K003/30; C09K005/04B4B |
| EP 1732977 | IPCI | C08J0009-14 [I,A]; C08J0009-00 [I,C] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] |
| | ECLA | C09K003/30; C09K005/04B4B; C08J009/14H2 |
| CN 1942513 | IPCI | C08J0009-14 [I,A]; C08J0009-00 [I,C*] |
| | IPCR | C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] |
| | ECLA | C09K003/30; C09K005/04B4B |
| JP 2007531814 | IPCI | C08G0018-28 [I,A]; C08G0018-00 [I,C*]; C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C09K0005-04 [I,A]; C09K0005-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30 [I,A] |
| | IPCR | C08G0018-00 [I,C]; C08G0018-28 [I,A]; C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-00 [I,C]; C09K0003-30 [I,A]; C09K0005-00 [I,C]; C09K0005-04 [I,A] |
| | FTERM | 4F074/AA80; 4F074/AA81; 4F074/BA48; 4F074/BA53; 4J034/CA03; 4J034/CA04; 4J034/CA05; 4J034/CB03; 4J034/CB04; 4J034/CB05; 4J034/CC03; 4J034/DA01; 4J034/DB04; 4J034/DF01; 4J034/DG03; 4J034/DG23; 4J034/H01; 4J034/H07; 4J034/HA09; 4J034/HC12; 4J034/HC61; 4J034/HC64; 4J034/HC67; 4J034/HC71; 4J034/MA11; 4J034/NA02; 4J034/QC01 |
| AT 398646 | IPCI | C08J0009-00 [I,C]; C08J0009-14 [I,A] |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A] |
| | ECLA | C08J009/14H2; C09K003/30; C09K005/04B4B |
| KR 2007015167 | IPCI | C08K0005-02 [I,A]; C08K0005-00 [I,C*]; C09K0003-30 [I,A]; C09K0005-04 [I,A]; C09K0005-00 [I,C*] |
| US 20080105848 | IPCI | C09K0003-00 [I,A] |
| | NCL | 252/067.000 |
| AB | A blowing agent composition for fire-resistant polyurethane and polyisocyanurate foams manufacture comprises 5 - 74 weight% of 1,1,3,3-pentafluorobutane (I), 24 - 93 weight% of trans-1,2-dichloroethylene (II) and 2 - 46 weight% of 1,1,1,3,3-pentafluoropropane (III). A typical composition consists of 100 weight parts of polyol Stepanpol PS2412 and 5 weight parts of a blowing agent (consisting of 33 weight% I, 34 weight% II and 33 weight% III). | |
| ST | blowing agent fire resistant polyurethane polyisocyanurate foam; pentafluorobutane dichloroethylene pentafluoropropane blowing agent fire | |

resistant foam
IT Blowing agents
Fire-resistant materials
(blowing agent composition for fire-resistant polyurethane and
polyisocyanurate foams)
IT Plastic foams
Polyisocyanurates
Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(blowing agent composition for fire-resistant polyurethane and
polyisocyanurate foams)
IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)
(fluoro; blowing agent composition for fire-resistant polyurethane and
polyisocyanurate foams)
IT Polyesters, uses
RL: POF (Polymer in formulation); USES (Uses)
(hydroxy-terminated; blowing agent composition for fire-resistant
polyurethane and polyisocyanurate foams)
IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6,
1,1,1,3,3-Pentafluorobutane 431-89-0, 1,1,1,2,3,3-Heptafluoropropane
460-73-1, 1,1,1,3,3-Pentafluoropropane
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)
(blowing agent composition for fire-resistant polyurethane and
polyisocyanurate foams)
IT 439592-40-2, Stepanopol PS 2412
RL: POF (Polymer in formulation); TEM (Technical or engineered material
use); USES (Uses)
(blowing agent composition for fire-resistant polyurethane and
polyisocyanurate foams)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Shankland, I; US 2003234380 A1 2003 CAPLUS
(2) Singh, R; WO 02099006 A 2002 CAPLUS

L6 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2005:648800 CAPLUS
DN 143:135297
ED Entered STN: 26 Jul 2005
TI Cleaning agent for charged precision electronics
IN Wang, Shengwen; Chen, Zulin
PA Gaoqi Environmental Protection Technology Co., Ltd., Guangzhou Nansha
Economic and technological Development Zone, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 11 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM C11D007-30
CC 46-6 (Surface Active Agents and Detergents)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|----------------|--|------------------------------------|------------------|----------|
| PI | CN 1417314 | A | 20030514 | CN 2001-129859 | 20011102 |
| | CN 1727462 | A | 20060201 | CN 2005-10072374 | 20011102 |
| PRAI | CN 2001-129859 | A3 | 20011102 | | |
| CLASS | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | | |
| CN 1417314 | ICM | C11D007-30 | | | |
| | IPCI | C11D0007-30 [ICM, 7]; C11D0007-22 [ICM, 7, C*] | | | |

IPCR C11D0007-22 [I,C*]; C11D0007-30 [I,A]
 CN 1727462 IPCI C11D0007-30 [I,A]; C11D0007-22 [I,C*]
 AB The cleaning agent is composed of 1,1,1,2,2,3,4,5,5,5-decafluoropentane (HFC43-10/tDCE) 2.0-95.0, trans-dichloroethylene 0.5-8.0, heptane 0.1-3.0, acetone 0.1-3.5, cyclohexane 0.1-8.0, and stabilizing agent 0.1-1.5%. The cleaning agent may be composed of methoxynonafluorobutane 2.0-92.0, 1,1,1,3,3-pentafluoropropane (HFC245Fa) 1.0-80.0, nonane 0.1-5.0, acetone 0.1-5.0, isopropanol 0.1-8.0, and stabilizing agent 0.1-1.0%. The cleaning agent may be also composed of chloropentafluoropropane (HCFC AK-225) 1.0-90.0, dichlorofluoroethane (HCFC14lb) 1.0-85.0, nonane 0.1-5.0, acetone 0.1-5.0, and stabilizing agent 0.1-2.0%.
 ST cleaning agent charged electronic
 IT Cleaning solvents
 Detergents
 (Cleaning agent for charged precision electronics)
 IT Detergents
 (cleaning compns.; Cleaning agent for charged precision electronics)
 IT 67-63-0, Isopropanol, uses 67-64-1, Acetone, uses 110-82-7,
 Cyclohexane, uses 111-84-2, Nonane 142-82-5, Heptane, uses
 156-60-5 460-73-1, 1,1,1,3,3-Pentafluoropropane
 1717-00-6, Dichlorofluoroethane 138495-42-8, 1,1,1,2,2,3,4,5,5,5-
 Decafluoropentane
 RL: NNU (Other use, unclassified); USES (Uses)
 (Cleaning agent for charged precision electronics containing)

L6 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2004:1019329 CAPLUS
 DN 141:425607
 ED Entered STN: 26 Nov 2004
 TI Flushing for refrigeration system components
 IN Thomas, Raymond H.; Cook, Kane D.; Manz, Anthony
 PA Honeywell International Inc., USA
 SO U.S. Pat. Appl. Publ., 7 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM F28G001-00
 ICS C11D003-00; D06L001-00; B08B009-00; B08B007-04; C23G001-36
 INCL 134010000; 062303000; 134022120
 CC 46-6 (Surface Active Agents and Detergents)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|------|----------|------------------|----------|
| PI | US 20040231702 | A1 | 20041125 | US 2004-824094 | 20040414 |
| | CA 2526622 | A1 | 20041209 | CA 2004-2526622 | 20040521 |
| | WO 2004105971 | A1 | 20041209 | WO 2004-US16229 | 20040521 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SI, SZ, T2, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG | | | | |
| EP | 1626821 | A1 | 20060222 | EP 2004-753115 | 20040521 |
| AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | | |
| CN | 1826188 | A | 20060830 | CN 2004-80021204 | 20040521 |
| JP | 2007500597 | T | 20070118 | JP 2006-533340 | 20040521 |

| | | | | | | |
|----------------|-----------------|---|----------|----|-------------|----------|
| US | 20060234896 | A1 | 20061019 | US | 2006-420131 | 20060524 |
| PRAI | US 2003-473316P | P | 20030522 | | | |
| US | 2004-824094 | A | 20040414 | | | |
| WO | 2004-US16229 | W | 20040521 | | | |
| CLASS | | | | | | |
| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | | | | |
| US 20040231702 | ICM | F28G001-00 | | | | |
| | ICS | C11D003-00; D06L001-00; B08B009-00; B08B007-04; | | | | |
| | | C23G001-36 | | | | |
| | INCL | 13401000; 06230300; 134022120 | | | | |
| | IPCI | F28G0001-00 [ICM, 7]; C11D0003-00 [ICS, 7]; D06L0001-00 [ICS, 7]; B08B0009-00 [ICS, 7]; B08B0007-04 [ICS, 7]; C23G0001-36 [ICS, 7]; C23G0001-00 [ICS, 7,C*] | | | | |
| | IPCR | B08B0007-00 [I,A]; B08B0007-00 [I,A]; B08B0009-02 [I,C*]; B08B0009-02 [I,A]; C11D0007-22 [I,C*]; C11D0007-30 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A]; C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028 [I,A]; C23G0005-04 [I,A] | | | | |
| | NCL | 134/01.00.000; 062/303.000; 134/022.120 | | | | |
| | ECLA | B08B007/00L; B08B009/02M2B6; C11D007/30; C11D011/00B2D6; C23G005/02; C23G005/028B; C23G005/04 | | | | |
| CA 2526622 | IPCI | B08B0007-00 [I,A]; B08B0009-032 [I,A]; B08B0009-02 [I,C*] | | | | |
| | IPCR | B08B0007-00 [I,A]; B08B0007-00 [I,C]; B08B0009-02 [I,C]; B08B0009-02 [I,A]; B08B0009-032 [I,A]; C11D0007-22 [I,C*]; C11D0007-30 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A]; C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028 [I,A]; C23G0005-04 [I,A] | | | | |
| | ECLA | B08B007/00L; B08B009/02M2B6; C11D007/30; C11D011/00B2D6; C23G005/02; C23G005/028B; C23G005/04 | | | | |
| WO 2004105971 | IPCR | B08B0007-00 [I,C*]; B08B0007-00 [I,A]; B08B0009-02 [I,C*]; B08B0009-02 [I,A]; C11D0007-22 [I,C*]; C11D0007-30 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A]; C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028 [I,A]; C23G0005-04 [I,A] | | | | |
| | ECLA | B08B007/00L; B08B009/02M2B6; C11D007/30; C11D011/00B2D6; C23G005/02; C23G005/028B; C23G005/04 | | | | |
| EP 1626821 | IPCI | B08B0007-00 [ICM, 7]; B08B0009-032 [ICS, 7]; B08B0009-02 [ICS, 7,C*] | | | | |
| | IPCR | B08B0007-00 [I,A]; B08B0007-00 [I,C*]; B08B0009-02 [I,C*]; B08B0009-02 [I,A]; C11D0007-22 [I,C*]; C11D0007-30 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A]; C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028 [I,A]; C23G0005-04 [I,A] | | | | |
| | ECLA | B08B007/00L; B08B009/02M2B6; C11D007/30; C11D011/00B2D6; C23G005/02; C23G005/028B; C23G005/04 | | | | |
| CN 1826188 | IPCI | B08B0007-00 [I,A]; B08B0009-032 [I,A]; B08B0009-02 [I,C*] | | | | |
| JP 2007500597 | IPCI | B08B0009-027 [I,A]; B08B0009-02 [I,C*]; B08B0003-02 [I,A]; B08B0003-08 [I,A] | | | | |
| | IPCR | B08B0009-02 [I,C]; B08B0009-027 [I,A]; B08B0003-02 [I,C]; B08B0003-02 [I,A]; B08B0003-08 [I,C]; B08B0003-08 [I,A]; B08B0007-00 [I,C*]; B08B0007-00 [I,A]; B08B0009-02 [I,A]; C11D0007-22 [I,C*]; C11D0007-30 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A]; C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028 [I,A]; C23G0005-04 [I,A] | | | | |
| | FTERM | 3B116/AA12; 3B116/AA47; 3B116/AB51; 3B116/CD22; 3B201/AA12; 3B201/AA47; 3B201/AB51; 3B201/BB12; 3B201/BB13; 3B201/BB14; 3B201/CD22 | | | | |

US 20060234896 IPCI C11D0017-00 [I,A]
 IPCR C11D0017-00 [I,C]; C11D0017-00 [I,A]; B08B0007-00
 [I,C*]; B08B0007-00 [I,A]; B08B0009-02 [I,C*];
 B08B0009-02 [I,A]; C11D0007-22 [I,C*]; C11D0007-30
 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A];
 C23G0005-00 [I,C*]; C23G0005-02 [I,A]; C23G0005-028
 [I,A]; C23G0005-04 [I,A]
 NCL 510/407.000
 ECLA B08B007/00L; B08B009/02M2B6; C11D007/30;
 C11D011/00B2D6; C23G005/02; C23G005/028B; C23G005/04

AB A method and apparatus for cleaning a component of an air-conditioning or refrigeration system provides for flushing liquid solvent, preferably nonflammable solvent such as HFC 245fa through the component to remove contamination from the component. The flushed solvent is vaporized and the contamination removed from the vaporized solvent so as to clean the solvent of the contamination. The cleaned solvent is liquefied and reused to flush the system component.
ST refrigeration system pentafluoropropane solvent flushing method app;
 fluoropropane solvent refrigeration system flushing app
IT Detergents
 (cleaning compns.; flushing for refrigeration system components)
IT Hydrocarbons, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fluoro, solvents; flushing for refrigeration system components)
IT Cleaning
 Refrigerating apparatus
 (flushing for refrigeration system components)
IT Refrigerating apparatus
 (household refrigerators; flushing for refrigeration system components)
IT Appliances
 (refrigerators; flushing for refrigeration system components)
IT 156-60-5, trans-1,2-Dichloroethylene 460-73-1, HFC 245fa
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent; flushing for refrigeration system components)

L6 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:772764 CAPLUS
DN 141:261651
ED Entered STN: 22 Sep 2004
TI Foam premixes having improved processability
IN Wu, Jinhuang; Caron, Laurent S. J.
PA Atofina Chemicals, Inc., USA
SO U.S., 2 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08G018-00
 ICS C08G018-08; C08K003-00
INCL 252182240; 510412000; 510415000; 516012000; 521131000; 521098000
CC 38-2 (Plastics Fabrication and Uses)
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|-------|----------|------------------|----------|
| ----- | ----- | ----- | ----- | ----- |
| PI US 6793845 | B1 | 20040921 | US 2003-420472 | 20030422 |
| CA 2459668 | A1 | 20041022 | CA 2004-2459668 | 20040304 |
| EP 1471102 | A1 | 20041027 | EP 2004-5508 | 20040308 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK | | | | |
| BR 2004000731 | A | 20050111 | BR 2004-731 | 20040322 |
| JP 2004323831 | A | 20041118 | JP 2004-103483 | 20040331 |
| CN 1550514 | A | 20041201 | CN 2004-10035158 | 20040420 |
| MX 2004PA03818 | A | 20050425 | MX 2004-PA3818 | 20040422 |

| | | | | | | |
|---------------|----------------|--|----------------------|-------|-------------|----------|
| US | 20050009932 | A1 | 20050113 | US | 2004-910814 | 20040803 |
| US | 7098254 | B2 | 20060829 | | | |
| US | 20060281826 | A1 | 20061214 | US | 2006-508440 | 20060823 |
| PRAI | US 2003-420472 | A | 20030422 | | | |
| | US 2004-910814 | A1 | 20040803 | | | |
| CLASS | | | | | | |
| PATENT NO. | CLASS | PATENT FAMILY | CLASSIFICATION CODES | | | |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| US 6793845 | ICM | C08G018-00 | | | | |
| | ICS | C08G018-08; C08K003-00 | | | | |
| | INCL | 252182240; 510412000; 510415000; 516012000; 521131000; 521098000 | | | | |
| | IPCI | C08G0018-00 [ICM, 7]; C08G0018-08 [ICS, 7]; C08K0003-00 [ICS, 7] | | | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04 [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*]; C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04 [I,A] | | | | |
| | NCL | 252/182.240; 510/412.000; 510/415.000; 516/012.000; 521/098.000; 521/131.000 | | | | |
| CA 2459668 | ECLA | C08J0009/14H2+L75/04; C08J0009/14P+L75/04 | | | | |
| | IPCI | C08J0009-228 [ICM, 7]; C08J0009-00 [ICM, 7,C*] | | | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04 [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*]; C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04 [I,A] | | | | |
| | ECLA | C08J0009/14H2+L75/04; C08J0009/14P+L75/04 | | | | |
| EP 1471102 | IPCI | C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*]; C08L0075-04 [ICS, 7]; C08L0075-00 [ICS, 7,C*] | | | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04 [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*]; C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04 [I,A] | | | | |
| | ECLA | C08J0009/14H2+L75/04; C08J0009/14P+L75/04 | | | | |
| BR 2004000731 | IPCI | C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*] | | | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04 [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*]; C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04 [I,A] | | | | |
| | ECLA | C08J0009/14H2+L75/04; C08J0009/14P+L75/04 | | | | |
| JP 2004323831 | IPCI | C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*]; C08L0075-04 [ICS, 7]; C08L0075-00 [ICS, 7,C*] | | | | |
| | IPCR | C08G0018-00 [I,A]; C08G0018-00 [I,C*]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,C*]; C08J0009-04 [I,A]; C08J0009-14 [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,A]; C08K0003-00 [I,C*]; C08L0075-00 [I,C*]; C08L0075-04 [I,A] | | | | |
| | FTERM | 4F074/AA78; 4F074/AA81; 4F074/BA42; 4F074/BA45; 4F074/BA53; 4F074/BA95; 4F074/CA21 | | | | |
| CN 1550514 | IPCI | C08J0009-04 [ICM, 7]; C08J0009-00 [ICM, 7,C*]; C08G0018-40 [ICS, 7]; C08G0018-00 [ICS, 7,C*] | | | | |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A]; C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04 [I,A]; C08J0009-09 [I,A] | | | | |

| | | |
|----------------|---|---|
| | | [I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*];
C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04
[I,A] |
| | ECLA | C08J009/14H2+L75/04; C08J009/14P+L75/04 |
| MX 2004PA03818 | IPCI | C08J0009-00 [ICM,7] |
| US 20050009932 | IPCI | C08J0009-14 [I,A]; C08J0009-00 [I,C*]; C08G0018-00
[I,A] |
| | IPCR | C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08G0018-00
[I,C*]; C08G0018-00 [I,A]; C08G0018-08 [I,A];
C08G0018-40 [I,A]; C08J0009-00 [I,A]; C08J0009-04
[I,A]; C08J0009-228 [I,A]; C08K0003-00 [I,C*];
C08K0003-00 [I,A]; C08L0075-00 [I,C*]; C08L0075-04
[I,A] |
| | NCL | 516/010.000; 516/012.000; 521/131.000; 521/098.000 |
| | ECLA | C08J009/14H2+L75/04; C08J009/14P+L75/04 |
| US 20060281826 | IPCI | C08G0018-48 [I,A]; C08G0018-00 [I,C*] |
| | IPCR | C08G0018-00 [I,C]; C08G0018-48 [I,A] |
| | NCL | 521/131.000 |
| | ECLA | M08G |
| AB | The processability of a foam premix containing hydrofluorocarbons and/or pentane-based blowing agents in polyols, e.g., polyester polyols, is improved by adding trans-1,2-dichloroethylene to the premix in an amount effective to enhance the processability. | |
| ST | polyurethane foam processability dichloroethylene additive; blowing agent pentane hydrofluorocarbon polyurethane foam processability; polyester polyol polyurethane foam processability dichloroethylene additive | |
| IT | Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(cellular; foam premixes having improved processability contain dichloroethylene) | |
| IT | Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoro, blowing agents; foam premixes having improved processability contain dichloroethylene and) | |
| IT | Plastic foams
RL: TEM (Technical or engineered material use); USES (Uses)
(foam premixes having improved processability contain hydrofluorocarbons and dichloroethylene) | |
| IT | Blowing agents
(foam premixes having improved processability contain hydrofluorocarbons and dichloroethylene as) | |
| IT | Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(hydroxy-terminated, foam components; foam premixes having improved processability contain hydrofluorocarbons and dichloroethylene as) | |
| IT | 78-78-4, Isopentane 109-66-0, Pentane, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(blowing agent; foam premixes having improved processability contain dichloroethylene and) | |
| IT | 406-58-6, 1,1,1,3,3-Pentafluorobutane 460-73-1,
1,1,1,3,3-Pentafluoropropane 811-97-2, 1,1,1,2-Tetrafluoroethane
RL: TEM (Technical or engineered material use); USES (Uses)
(foam premixes having improved processability contain dichloroethylene and) | |
| IT | 156-60-5, trans-1,2-Dichloroethylene
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(foam premixes having improved processability contain hydrofluorocarbons and) | |
| RE.CNT | 4 | THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD |
| RE | (1) Harris; US 20020061935 A1 2002 | |

- (2) Harris; US 6472444 B1 2002 CAPLUS
 (3) Merchant; US 5196137 A 1993 CAPLUS
 (4) Werner; US 5723509 A 1998 CAPLUS

L6 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2004:580665 CAPLUS
 DN 141:124747
 ED Entered STN: 21 Jul 2004
 TI Azeotrope-like compositions of pentafluoropropane, chloropropene and dichloroethylene
 IN Bogdan, Mary C.; Pham, Hang T.; Knopek, Gary M.; Singh, Rajiv R.; Williams, David J.; Cook, Kane D.
 PA Honeywell International Inc., USA
 SO U.S., 5 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C11D017-00
 INCL 510408000; 510412000; 510415000
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 45
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|----------|
| PI US 6764990 | B1 | 20040720 | US 2003-455120 | 20030604 |
| PRAI US 2003-455120 | | 20030604 | | |

 CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|---------------------------------------|
| US 6764990 | ICM | C11D017-00 |
| | INCL | 510408000; 510412000; 510415000 |
| | IPCI | C11D0017-00 [ICM, 7] |
| | IPCR | C11D0007-50 [I,C*]; C11D0007-50 [I,A] |
| | NCL | 510/408.000; 510/412.000; 510/415.000 |
| | ECLA | C11D007/50D2 |

- AB Title azeotrope-like composition consists of 140 wt% of trans-1,2-dichloroethylene, 1-90 wt% of 2-chloropropane, and 10-99 wt% of HFC-245fa (1,1,1,3,3-pentafluoropropane). The composition is environmentally desirable for use as refrigerants, aerosol propellants, metered dose inhalers, blowing agents for polymer foam, heat transfer media, and gaseous dielecs.
 ST azeotrope compn pentafluoropropane chloropropene dichloroethylene
 IT Propellants (sprays and foams)
 (aerosol; azeotrope-like compns. of pentafluoropropane, chloropropene and dichloroethylene)
 IT Blowing agents
 Heat transfer agents
 Refrigerants
 (azeotrope-like compns. of pentafluoropropane, chloropropene and dichloroethylene)
 IT Plastic foams
 RL: TEM (Technical or engineered material use); USES (Uses)
 (azeotrope-like compns. of pentafluoropropane, chloropropene and dichloroethylene)
 IT Electric insulators
 (gaseous; azeotrope-like compns. of pentafluoropropane, chloropropene and dichloroethylene)
 IT Polysiloxanes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (polyether-, foam stabilizers; azeotrope-like compns. of pentafluoropropane, chloropropene and dichloroethylene)
 IT Polyethers, uses
 RL: MOA (Modifier or additive use); USES (Uses)

(siloxane-, foam stabilizers; azeotrope-like compns. of pentafluoropropane, chloropropane and dichloroethylene)
IT 98-94-2
RL: CAT (Catalyst use); USES (Uses)
(azeotrope-like compns. of pentafluoropropane, chloropropane and dichloroethylene)
IT 59736-88-8P, 4,4'-Diphenylmethane diisocyanate-polypropylene glycol sucrose ether copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(azeotrope-like compns. of pentafluoropropane, chloropropane and dichloroethylene)
IT '75-29-6, 2-Chloropropane 156-60-5, trans-1,2-Dichloroethylene
460-73-1, 1,1,1,3,3-Pentafluoropropane
RL: MOA (Modifier or additive use); USES (Uses)
(blown agent; azeotrope-like compns. of pentafluoropropane, chloropropane and dichloroethylene)
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bailey; US 2834748 A 1958 CAPLUS
(2) Bailey; US 2917480 A 1959 CAPLUS
(3) Bement; US 6514928 B1 2003 CAPLUS
(4) Fishback; US 5523333 A 1996 CAPLUS
(5) Haluska; US 2846458 A 1958 CAPLUS
(6) Kitamura; US 5895793 A 1999 CAPLUS
(7) Samejima; US 5320683 A 1994 CAPLUS
(8) Saunders; Polyurethanes Chemistry and Technology, 1962, VI and II
(9) Swan; US 6100229 A 2000 CAPLUS

L6 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:550720 CAPLUS
DN 141:89880
ED Entered STN: 09 Jul 2004
TI Blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons
IN Galaton, Steve M.; Bertelo, Christopher
PA USA
SO U.S. Pat. Appl. Publ., 3 pp., Cont.-in-part of U.S. Pat. Appl. 2004
132,631.
CODEN: USXXCO

DT Patent
LA English
IC ICM C11D017-00
INCL 510407000; 510412000
CC 37-2 (Plastics Manufacture and Processing)
Section cross-reference(s): 38

| PATENT NO. | | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|------|----------|------------------|----------|
| PI | US 20040132632 | A1 | 20040708 | US 2003-396747 | 20030325 |
| | US 7144926 | B2 | 20061205 | | |
| | US 20040132631 | A1 | 20040708 | US 2003-336368 | 20030102 |
| | CA 2452737 | A1 | 20040702 | CA 2003-2452737 | 20031209 |
| | MX 2003PA11741 | A | 20040723 | MX 2003-PA11741 | 20031217 |
| | JP 2004211081 | A | 20040729 | JP 2003-420691 | 20031218 |
| | BR 2003005963 | A | 20040914 | BR 2003-5963 | 20031222 |
| | EP 1435371 | A1 | 20040707 | EP 2003-293344 | 20031229 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | CN 1515607 | A | 20040728 | CN 2003-10124553 | 20031231 |
| PRAI | US 2003-336368 | A2 | 20030102 | | |
| | US 2003-396747 | A | 20030325 | | |

| CLASS
PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------------|--|---|
| US 20040132632 | ICM
INCL
IPCI
IPCR
NCL
ECLA | C11D017-00
510407000; 510412000
C08J0009-14 [I,A]; C08J0009-00 [I,C*]
C08J0009-00 [I,C*]; C08J0009-14 [I,A]
510/407.000; 510/412.000; 521/131.000; 252/067.000;
252/364.000; 510/408.000; 510/415.000; 510/470.000;
516/012.000; 521/155.000; 521/170.000
C08J009/14H2; C08J009/14H2+L75/04 |
| US 20040132631 | IPCI
IPCR
NCL | C11D017-00 [ICM, 7]
C08J0009-00 [I,C*]; C08J0009-14 [I,A]
510/407.000 |
| CA 2452737 | IPCI | C08L0075-04 [ICM, 7]; C08L0075-00 [ICM, 7,C*];
C08K0005-02 [ICS, 7]; C08K0005-00 [ICS, 7,C*];
C08J0009-228 [ICS, 7]; C08J0009-00 [ICS, 7,C*];
C08G0018-32 [ICS, 7]; C08G0018-72 [ICS, 7]; C08G0018-00
[ICS, 7,C*]
IPCR
C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0101-00
[N,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A] |
| MX 2003PA11741 | IPCI | C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*] |
| JP 2004211081 | IPCI
IPCR
FTERM | C08G0018-00 [ICM, 7]; C08J0009-14 [ICS, 7]; C08L0101-00 [ICS, 7]
C08J0009-00 [I,C*]; C08J0009-14 [I,A]
4F074/AA78; 4F074/BA43; 4F074/BA53; 4F074/BA95;
4F074/CA21; 4F074/CC04Y; 4F074/DA18; 4F074/DA32;
4J034/DA01; 4J034/DB03; 4J034/H001; 4J034/H007;
4J034/NA02; 4J034/QB17; 4J034/QC01 |
| BR 2003005963 | IPCI | C08K0005-02 [ICM, 7]; C08K0005-00 [ICM, 7,C*];
C08J0009-20 [ICS, 7]; C08J0009-00 [ICS, 7,C*];
C08G0071-04 [ICS, 7]; C08G0071-00 [ICS, 7,C*]
IPCR
C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0101-00
[N,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A] |
| EP 1435371 | IPCI
IPCR | C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*];
C08L0075-04 [ICS, 7]; C08L0075-00 [ICS, 7,C*]
C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0101-00
[N,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A] |
| CN 1515607 | IPCI
IPCR
ECLA | C08K0005-02 [ICM, 7]; C08K0005-00 [ICM, 7,C*];
C08J0009-14 [ICS, 7]; C08J0009-00 [ICS, 7,C*]
C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0101-00
[N,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]
C08J0009/14H2; C08J009/14H2+L75/04 |
| AB | The hydrofluorocarbon-based foam blowing agent blends comprise trans-1,2-dichloroethylene and one or more hydrofluorocarbons such as 1,1,1,3,3-pentafluoropropane, 1,1,1,3,3-pentafluorobutane, and 1,1,1,2-tetrafluoroethane. The resulting foams exhibit dramatic improvement in fire performance. Thus, a foam sample with excellent fire performance was produced from a composition containing Desmodur 44V70 156.3, Stepanpol PS 2412 100, Polycat 5 0.17, K 15 2.71, B 8465 2, trans-1,2-dichloroethylene 2.85, and 1,1,1,3,3-pentafluoropropane (HFC 245fa) 35.46 parts. | |
| ST | blowing agent trans dichloroethylene hydrofluorocarbon | |
| IT | Hydrocarbons, uses | |
| | RL: MOA (Modifier or additive use); USES (Uses)
(fluoro, blowing agent; production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons) | |
| IT | Blowing agents
Fire-resistant materials
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons) | |

IT Polyurethanes, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT Plastic foams
RL: TEM (Technical or engineered material use); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6,
1,1,1,3,3-Pentafluorobutane 460-73-1, 1,1,1,3,3-Pentafluoropropane 811-97-2, 1,1,1,2-Tetrafluoroethane
RL: MOA (Modifier or additive use); USES (Uses)
(blowing agent; production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT 439592-42-4P, Desmodur 44V70-Stepanpol PS 2412 copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
- (1) Anon; EP 0527019 1999
(2) Anon; WO 9935209 1999 CAPLUS
(3) Barthelemy; US 5478492 A 1995 CAPLUS
(4) Bogdan; US 6790820 B1 2004 CAPLUS
(5) Fitzgerald; US 6746998 B1 2004
(6) Hitters; US 20030141481 A1 2003 CAPLUS
(7) Knopeck; US 20030234380 A1 2003 CAPLUS
(8) Merchant; US 5194170 A 1993 CAPLUS
(9) Merchant; US 5196137 A 1993 CAPLUS
(10) Singh; US 6455601 B1 2002 CAPLUS
(11) Swan; US 5126067 A 1992 CAPLUS
(12) VON Bonin; US 4024090 A 1977 CAPLUS

L6 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:545719 CAPLUS

DN 141:89878

ED Entered STN: 08 Jul 2004

TI Blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons

IN Galaton, Steven Marc; Bertelo, Christopher Anthony

PA Atofina Chemicals, Inc., USA

SO Eur. Pat. Appl., 6 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C08J009-14

ICS C08L075-04

CC 37-2 (Plastics Manufacture and Processing)

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | EP 1435371 | A1 | 20040707 | EP 2003-293344 | 20031229 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| | US 20040132631 | A1 | 20040708 | US 2003-336368 | 20030102 |

| | | | | |
|---------------------|----|----------|----------------|----------|
| US 20040132632 | A1 | 20040708 | US 2003-396747 | 20030325 |
| US 7144926 | B2 | 20061205 | | |
| PRAI US 2003-336368 | A | 20030102 | | |
| US 2003-396747 | A | 20030325 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----------------|----------------------------|---|
| EP 1435371 | ICM
ICS
IPCI
IPCR | C08J009-14
C08L075-04
C08J0009-14 [ICM, 7]; C08J0009-00 [ICM, 7,C*];
C08L0075-04 [ICS, 7]; C08L0075-00 [ICS, 7,C*]
C08G0018-00 [I,C*]; C08G0018-00 [I,A]; C08G0101-00
[N,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A] |
| US 20040132631 | IPCI
IPCR
NCL | C11D0017-00 [ICM, 7]
C08J0009-00 [I,C*]; C08J0009-14 [I,A]
510/407.000 |
| US 20040132632 | IPCI
IPCR
NCL | C08J0009-14 [I,A]; C08J0009-00 [I,C*]
C08J0009-00 [I,C*]; C08J0009-14 [I,A]
510/407.000; 510/412.000; 521/131.000; 252/067.000;
252/364.000; 510/408.000; 510/415.000; 510/470.000;
516/012.000; 521/155.000; 521/170.000 |
| | ECLA | C08J009/14H2; C08J009/14H2+L75/04 |

AB The hydrofluorocarbon-based foam blowing agent blends comprise trans-1,2-dichloroethylene and one or more hydrofluorocarbons such as 1,1,1,3,3-pentafluoropropane, 1,1,1,3,3-pentafluorobutane, and 1,1,1,2-tetrafluoroethane. The resulting foams exhibit dramatic improvement in fire performance. Thus, a foam sample with excellent fire performance was produced from Desmodur 44V70 156.3, Stepanpol PS 2412 100, Polycat 5 0.17, K 15 2.71, B 8465 2, trans-1,2-dichloroethylene 2.85, and ,1,1,3,3-pentafluoropropane (HFC 245fa) 35.46 parts.

ST blowing agent trans dichloroethylene hydrofluorocarbon

IT Hydrocarbons, uses

RL: MOA (Modifier or additive use); USES (Uses)
(fluoro, blowing agent; production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT Blowing agents

Fire-resistant materials
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT Polyurethanes, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT Plastic foams

RL: TEM (Technical or engineered material use); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT 156-60-5 406-58-6, 1,1,1,3,3-Pentafluorobutane 460-73-1

, 1,1,1,3,3-Pentafluoropropane 811-97-2, 1,1,1,2-Tetrafluoroethane
RL: MOA (Modifier or additive use); USES (Uses)
(blowing agent; production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

IT 439592-42-4P, Desmodur 44V70-Stepanpol PS 2412 copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(production of blowing agent blends containing trans-1,2-dichloroethylene and hydrofluorocarbons)

and

hydrofluorocarbons)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Honeywell Int Inc; WO 03051968 A 2003 CAPLUS
- (2) Merchant, A; US 5194170 A 1993 CAPLUS
- (3) Merchant, A; US 5196137 A 1993 CAPLUS
- (4) Singh, R; WO 02099006 A 2002 CAPLUS

L6 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:84179 CAPLUS

DN 140:132918

ED Entered STN: 02 Feb 2004

TI Attenuation of methane and volatile organic compounds in landfill soil covers

AU Scheutz, Charlotte; Mosbaek, Hans; Kjeldsen, Peter

CS Environment & Resources, Technical University of Denmark, Lyngby, DK-2800, Den.

SO Journal of Environmental Quality (2004), 33(1), 61-71
CODEN: JEVQAA; ISSN: 0047-2425

PB American Society of Agronomy

DT Journal

LA English

CC 60-5 (Waste Treatment and Disposal)

Section cross-reference(s): 19

AB The potential for natural attenuation of volatile organic compds. (VOCs) in landfill covers was investigated in soil microcosms incubated with methane and air, simulating the gas composition in landfill soil covers. Soil was sampled at Skellingsted Landfill at a location emitting methane. In total, 26 VOCs were investigated, including chlorinated methanes, ethanes, ethenes, fluorinated hydrocarbons, and aromatic hydrocarbons. The soil showed a high capacity for methane oxidation resulting in very high oxidation rates of between 24 and 112 µg CH₄ g⁻¹ h⁻¹. All lower chlorinated compds. were shown degradable, and the degradation occurred in parallel with the oxidation of methane. In general, the degradation rates of the chlorinated aliphatics were inversely related to the chlorine to carbon ratios. For example, in batch expts. with chlorinated ethylenes, the highest rates were observed for vinyl chloride (VC) and lowest rates for trichloroethylene (TCE), while tetrachloroethylene (PCE) was not degraded. Maximal oxidation rates for the halogenated aliphatic compds. varied between 0.03 and 1.7 µg g⁻¹ h⁻¹. Fully halogenated hydrocarbons (PCE, tetrachloromethane [TeCM], chlorofluorocarbon [CFC]-11, CFC-12, and CFC-113) were not degraded in the presence of methane and oxygen. Aromatic hydrocarbons were rapidly degraded giving high maximal oxidation rates (0.17-1.4 µg g⁻¹ h⁻¹). The capacity for methane oxidation was related to the depth of oxygen penetration. The methane oxidizers were very active in oxidizing methane and the selected trace components down to a depth of 50 cm below the surface. Maximal oxidation activity occurred in a zone between 15 and 20 cm below the surface, as this depth allowed sufficient supply of both methane and oxygen. Mass balance calcns. using the maximal oxidation rates obtained demonstrated that landfill soil covers have a significant potential for not only methane oxidation but also cometabolic degradation of selected volatile orgs., thereby reducing emissions to the atmospheric

ST attenuation methane oxidn halo VOC degrdn landfill soil cover

IT Volatile organic compounds

RL: POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)

(degradation; attenuation of methane and volatile organic compds. in landfill

soil covers)

IT Soils

Waste gases

(landfill, covers; attenuation of methane and volatile organic compds. in

- landfill soil covers)
- IT 56-23-5, Carbon tetrachloride, processes 67-66-3, Tri chloro methane, processes 71-43-2, Benzene, processes 71-55-6, 1,1,1-Tri chloroethane 75-01-4, Vinyl chloride, processes 75-09-2, Di chloro methane, processes 75-34-3, 1,1 Di chloro ethane 75-35-4, 1,1-Dichloroethylene, processes 75-43-4, Hfc21 75-45-6, Hfc22 75-69-4, Cfc11 75-71-8, Cfc12 76-13-1, Cfc113 79-00-5, 1,1,2-Trichloroethane 79-01-6, Trichloroethylene, processes 79-34-5, 1,1,2,2-Tetrachloroethane 100-41-4, Ethyl benzene, processes 107-06-2, 1,2 Di chloro ethane, processes 108-88-3, Toluene, processes 127-18-4, Tetrachloroethylene, processes 156-59-2, cis-1,2-Dichloroethylene 156-60-5, trans-1,2-Dichloroethylene 460-73-1, Hfc245fa 811-97-2, h Fc134a 1330-20-7, Xylene, processes 1717-00-6, Hfcf141b RL: POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(attenuation of methane and volatile organic compds. in landfill soil covers)
- IT 74-82-8, Methane, processes
RL: FMU (Formation, unclassified); POL (Pollutant); REM (Removal or disposal); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(oxidation; attenuation of methane and volatile organic compds. in landfill soil covers)
- RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Allen, M; Environ Sci Technol 1997, V31, P1054 CAPLUS
(2) Alvarez-Cohen, L; Appl Environ Microbiol 1991, V57, P1031 CAPLUS
(3) Alvarez-Cohen, L; Appl Environ Microbiol 1991, V57, P228 CAPLUS
(4) Alvarez-Cohen, L; Biodegradation 2001, V12, P105 CAPLUS
(5) Aziz, C; Biotechnol Bioeng 1999, V65, P100 CAPLUS
(6) Bender, M; Chemosphere 1993, V26, P687 CAPLUS
(7) Boeckx, P; Nutr Cycling Agroecosyst 1997, V49, P91 CAPLUS
(8) Bogner, J; Environ Sci Technol 1997, V31, P2504 CAPLUS
(9) Borjesson, G; FEMS Microbiol Ecol 1998, V26, P207 CAPLUS
(10) Brosseau, J; Atmos Environ 1994, V28, P285 CAPLUS
(11) CambridgeSoft Corporation; ChemFinder.com database and internet searching [Online], <http://chemfinder.cambridgessoft.com/> 2003
(12) Chang, W; Biodegradation 1995, V6, P1 CAPLUS
(13) Christensen, T; Proc Sardinia '95, 5th Int Landfill Symp 1995, VIII, P3
(14) Christoffersen, M; J Environ Qual 2000, V29, P1989 CAPLUS
(15) Christoffersen, M; Waste Manage Res 2001, V19, P579 CAPLUS
(16) Christoffersen, M; Waste Manage Res 2001, V19, P595 CAPLUS
(17) Czepiel, P; J Geophys Res [Atmos] 1996, V101, P16721 CAPLUS
(18) DeFlaun, M; Bio/Technology 1992, V10, P1576 CAPLUS
(19) De Visscher, A; Environ Sci Technol 1999, V33, P1854 CAPLUS
(20) Deipser, A; Environ Sci Pollut Res Int 1997, V4, P209 CAPLUS
(21) Ejlertsson, J; Antonie van Leeuwenhoek 1996, V69, P67 CAPLUS
(22) Eklund, B; Environ Sci Technol 1998, V32, P2233 CAPLUS
(23) El-Farhan, Y; J Environ Qual 2000, V29, P778 CAPLUS
(24) Figueiroa, R; Proc Sardinia '93, 4th Int Landfill Symp 1993, P701
(25) Hanson, R; Microbiol Rev 1996, V60, P439 CAPLUS
(26) Henson, J; J Ind Microbiol 1989, V4, P29 CAPLUS
(27) Howard, P; Handbook of environmental fate and exposure data for organic chemicals. Solvents 1993, VIV
(28) Janssen, D; Water Sci Technol 1995, V31(1), P237 CAPLUS
(29) Jones, H; FEMS Microbiol Ecol 1993, V102, P185 CAPLUS
(30) Key, B; Environ Sci Technol 1997, V31, P2445 CAPLUS
(31) Kightley, D; Appl Environ Microbiol 1995, V61, P592 CAPLUS
(32) King, G; Appl Environ Microbiol 1992, V58, P2758 CAPLUS
(33) Kjeldsen, P; J Air Waste Manage Assoc 1997, V47, P1268 CAPLUS
(34) Kjeldsen, P; Waste Manage Res 1995, V13, P467 CAPLUS
(35) Landa, A; Appl Environ Microbiol 1994, V60, P3368 CAPLUS

- (36) Lelieveld, J; Tellus Ser B 1998, V50B, P128 CAPLUS
- (37) Liptay, K; J Geophys Res [Atmos] 1998, V103, P8243 CAPLUS
- (38) Lu, C; Water Sci Technol 1998, V38(7), P19 CAPLUS
- (39) Mackay, D; Illustrated handbook of physical-chemical properties and environmental fate of organic chemicals. Organic chemicals 1993, VIII
- (40) McLaren, R; Geoderma 1983, V31, P97 CAPLUS
- (41) Oldenhuis, R; Appl Environ Microbiol 1989, V55, P2819 CAPLUS
- (42) Oldenhuis, R; Appl Environ Microbiol 1991, V57, P7 CAPLUS
- (43) Oremland, R; Nature (London) 1992, V356, P421 CAPLUS
- (44) Rettenberger, G; Landfilling of waste: Biogas 1996, P51
- (45) Rivas, I; Water Sci Technol 2000, V41(4), P461
- (46) Soil Survey Staff; USDA Soil Conver Serv Agric Handb 1975, V436
- (47) Strand, S; Reg J Water Pollut Control Fed 1990, V62, P124 CAPLUS
- (48) Streger, S; Environ Sci Technol 1999, V23, P4477
- (49) Svenning, M; FEMS Microbiol Ecol 2003, V44, P347 CAPLUS
- (50) Tsien, H; Appl Environ Microbiol 1989, V55, P3155 CAPLUS
- (51) Van Hylckama Vlieg, J; Appl Environ Microbiol 1996, V62, P3304 CAPLUS
- (52) Wallington, T; Environ Sci Technol 1994, V28, P320A CAPLUS
- (53) Whalen, S; Appl Environ Microbiol 1990, V56, P3405 CAPLUS
- (54) Willumsen, C; Proc Sardinia '91, 3rd Int Landfill Symp 1991, V1, P329

L6 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:4726 CAPLUS

DN 141:226487

ED Entered STN: 05 Jan 2004

TI Trans-1,2-dichloroethylene for improving fire performance of urethane foam

AU Wu, Jinhuang; Bertolo, Christopher; Caron, Laurent

CS ATOFINA Chemicals, Inc., King of Prussia, PA, 19406, USA

SO Conference Proceedings - Polyurethanes Expo, Orlando, FL, United States, Oct. 1-3, 2003 (2003), 454-462 Publisher: Alliance for the Polyurethanes Industry, Arlington, Va.

CODEN: 69EXJX

DT Conference

LA English

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

AB In the United States, HCFC-141b was phased out of urethane foam applications on Jan. 1, 2003. Zero ozone depletion-potential (ODP) alternatives such as hydrofluorocarbons (HFCs) and hydrocarbons (normal pentane, iso-pentane and cyclopentane) were introduced to replace HCFC-141b. However, none of these alternatives can match the performance of HCFC-141b in terms of handling, economics, and overall final product performance. In particular, the fire performance of hydrocarbon-based foams cannot reach the performance previously achieved with HCFC-141b. Trans-1,2-dichloroethylene is a liquid at room temperature (b.p. 48°). It does not deplete the ozone layer, and it has very low global warming potential (GWP) because it has very short atmospheric lifetime. The authors

have

recently reported that when trans-1,2-dichloroethylene is used in urethane foams with hydrocarbons, it could improve the fire performance of the foams based on a small-scale fire test (Mobil 45). They report phys. properties such as dimensional stability and compressive strength of hydrocarbon/trans-1,2-dichloroethylene-based foams. They have also extended the studies of the use of trans-1,2-dichloroethylene and they report on the fire performance and phys. properties of HFC blown urethane foams incorporating trans-1,2-dichloroethylene.

ST hydrocarbon trans dichloroethylene blown urethane foam flammability improved; hydrofluorocarbon trans dichloroethylene blown urethane foam flammability improved

IT Polyurethanes, uses

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cellular; nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Blowing agents
 Compressive strength
 Fireproofing agents
 Flammability
 Thermal insulation foams
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Hydrocarbons, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT Polymer degradation
 (thermal; nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT 156-60-5, trans-1,2-Dichloroethylene
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT 192648-01-4P, Mondur 489-STEPANPol PS 2352 copolymer 439592-42-4P, DESMODUR 44V70-STEPANPOL PS 2412 copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

IT 78-78-4, Isopentane 109-66-0, n-Pentane, uses 287-92-3, Cyclopentane 406-58-6, HFC-365mfc 460-73-1, HFC-245fa 745816-72-2, Hydrosol Pentane 15
 RL: TEM (Technical or engineered material use); USES (Uses)
 (nonozone depleting blowing agents with trans-1,2-dichloroethylene for improving fire performance of urethane foam)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
- (1) Anon; Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter ASTM E 1354
 - (2) Berrier, R; Polyurethanes Expo '98 1998, P5 CAPLUS
 - (3) Bob, J; The Earth Technologies Forum 1999, P273
 - (4) Dourdin, P; Polyurethanes Expo '2001 2001, P325 CAPLUS
 - (5) Francesca, P; Environmental and thermal insulation requirements for polyurethane rigid foams for the professional cold chain industry 2001
 - (6) William, D; The Earth Technologies Forum 1998, P270
 - (7) Wu, J; Polyurethanes Conference Proceeding 2003, P144

L6 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:757787 CAPLUS
 DN 139:278808

ED Entered STN: 26 Sep 2003

TI Compositions of pentafluoropropane

IN Knopeck, Gary M.; Shankland, Ian; Singh, Rajiv R.

PA Honeywell International Inc., USA

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C09K003-30

ICS C09K005-04; C08J009-14; C11D007-50

CC 51-8 (Fossil Fuels, Derivatives, and Related Products)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------|------|----------|-----------------|----------|
| ----- | ---- | ----- | ----- | ----- |
| PI WO 2003078539 | A1 | 20030925 | WO 2003-US8141 | 20030314 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
 PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
 TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 AU 2003220343 A1 20030929 AU 2003-220343 20030314
 US 20030234380 A1 20031225 US 2003-389503 20030314
 US 6955769 B2 20051018
 EP 1483352 A1 20041208 EP 2003-716642 20030314
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
 JP 2005520884 T 20050714 JP 2003-576535 20030314
 CN 1653155 A 20050810 CN 2003-810912 20030314
 TW 290167 B 20071121 TW 2003-92105626 20030314
 PRAI US 2002-363978P P 20020314
 WO 2003-US8141 W 20030314

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----------------|-------|---|
| WO 2003078539 | ICM | C09K003-30 |
| | ICS | C09K005-04; C08J009-14; C11D007-50 |
| | IPCI | C09K0003-30 [ICM,7]; C09K0005-04 [ICS,7]; C09K0005-00
[ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00
[ICS,7,C*]; C11D0007-50 [ICS,7] |
| | IPCR | C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30
[I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*];
C09K0005-04 [I,A]; C11D0007-22 [N,C*]; C11D0007-28
[N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]
C09K003/30; C09K005/04B4B; C11D007/50A6; M11D
C09K0003-30 [ICM,7]; C09K0005-04 [ICS,7]; C08J0009-00
[ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-7 |
| AU 2003220343 | ECLA | |
| | IPCI | F25D0001-00 [ICM,7]; C09K0005-00 [ICS,7] |
| US 20030234380 | IPCI | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C09K0005-00
[I,C*]; C09K0005-04 [I,A]; C11D0007-22 [N,C*];
C11D0007-28 [N,A]; C11D0007-50 [I,C*]; C11D0007-50
[I,A] |
| | NCL | 252/067.000; 264/053.000; 570/126.000 |
| | ECLA | C09K003/30; C09K005/04B4B; C11D007/50A6 |
| EP 1483352 | IPCI | C09K0003-30 [ICM,7]; C09K0005-04 [ICS,7]; C09K0005-00
[ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00
[ICS,7,C*]; C11D0007-50 [ICS,7] |
| | IPCR | C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30
[I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*];
C09K0005-04 [I,A]; C11D0007-22 [N,C*]; C11D0007-28
[N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]
C09K0003-30 [ICM,7]; C09K0003-00 [ICS,7] |
| JP 2005520884 | IPCI | C09K0003-30 [I,A]; C09K0003-30 [I,C*]; C09K0005-00
[I,C*]; C09K0005-04 [I,A]; C11D0007-22 [N,C*];
C11D0007-28 [N,A]; C11D0007-50 [I,A]; C11D0007-50
[I,C*] |
| CN 1653155 | IPCI | C09K0003-30 [ICM,7]; C08J0009-14 [ICS,7]; C08J0009-00
[ICS,7,C*]; C11D0007-50 [ICS,7]; C09K0005-04 [ICS,7];
C09K0005-00 [ICS,7,C*] |
| | IPCR | C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30
[I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*];
C09K0005-04 [I,A]; C11D0007-22 [N,C*]; C11D0007-28 |

TW 290167 IPCI [N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]
 [I,C]; C09K0003-30 [I,C]; C09K0003-30 [I,A]; C09K0005-00
 IPCR C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C11D0007-22
 [N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
 C11D0007-50 [I,A]
 ECLA C09K003/30; C09K005/04B4B; C11D007/50A6; M11D
AB Compns. comprising HFC-245fa and trans-1,2-dichloroethylene exhibit relatively high solubility with conventional hydrocarbon lubricants, non-flammability, and relatively constant b.ps. The compns. are suitable for use as chlorofluorocarbon or hydrochlorofluorocarbon replacements, especially as propellants.
ST pentafluoropropane trans dichloroethylene propellant
IT Propellants (sprays and foams)
 (compns. of pentafluoropropane for use as propellants)
IT Lubricants
 (hydrocarbon; compns. of pentafluoropropane for use as propellants)
IT Hydrocarbon oils
 Polysiloxanes, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (lubricants; compns. of pentafluoropropane for use as propellants)
IT 156-60-5, trans-1,2-Dichloroethylene 460-73-1, HFC-245fa
 RL: TEM (Technical or engineered material use); USES (Uses)
 (compns. of pentafluoropropane for use as propellants)
IT 604807-60-5, Oak 7B1 604807-66-1, Sunisco Gs
 RL: MOA (Modifier or additive use); USES (Uses)
 (lubricants; compns. of pentafluoropropane for use as propellants)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
 (1) Allied Signal Inc; WO 9935209 A 1999 CAPLUS
 (2) Gorton, E; US 5851977 A 1998 CAPLUS

L6 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2003:491307 CAPLUS
DN 139:54031
ED Entered STN: 27 Jun 2003
TI Pentafluoropropane-based compositions with good relatively constant boiling point and vapor pressure
IN Hitters, Guillermo J.; Cook, Kane D.; Knopeck, Gary M.; Pham, Hang T.; Shankland, Ian; Singh, Rajiv R.
PA Honeywell International Inc., USA
SO PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08J009-14
 ICS C09K005-04
CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37, 48
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------|--|----------|-----------------|----------|
| PI WO 2003051968 | A2 | 20030626 | WO 2002-US40482 | 20021217 |
| WO 2003051968 | A3 | 20040408 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, Hu, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, | | | |

| | | | |
|--|---|----------------|------------------------------------|
| | FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | |
| AU 2002360653 | A1 20030630 | AU 2002-360653 | 20021217 |
| US 20030141481 | A1 20030731 | US 2002-321193 | 20021217 |
| US 6896823 | B2 20050524 | | |
| EP 1458796 | A2 20040922 | EP 2002-795926 | 20021217 |
| EP 1458796 | B1 20080116 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | |
| JP 2005513181 | T 20050512 | JP 2003-552841 | 20021217 |
| CN 1617903 | A 20050518 | CN 2002-827976 | 20021217 |
| HU 2006000303 | A2 20060728 | HU 2006-303 | 20021217 |
| AT 384096 | T 20080215 | AT 2002-795926 | 20021217 |
| ES 2299627 | T3 20080601 | ES 2002-795926 | 20021217 |
| US 20050205832 | A1 20050922 | US 2005-77928 | 20050311 |
| US 7169320 | B2 20070130 | | |
| PRAI US 2001-342067/P | P | 20011218 | |
| US 2002-321193 | A3 | 20021217 | |
| WO 2002-US40482 | W | 20021217 | |
| CLASS | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
| ----- | ----- | ----- | ----- |
| WO 2003051968 | ICM C08J009-14
ICS C09K005-04
IPCI C08J0009-14 [ICM,7]; C08J0009-00 [ICM,7,C*];
C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]
IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-00
[I,C*]; C09K0003-00 [I,A]; C09K0003-30 [I,C*];
C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04
[I,A]
ECLA C08J0009/14P; C09K0003/30; C09K005/04B4B | | |
| AU 2002360653 | IPCI C08J0009-14 [ICM,7]; C08J0009-00 [ICM,7,C*];
C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]
IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-00
[I,C*]; C09K0003-00 [I,A]; C09K0003-30 [I,C*];
C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04
[I,A] | | |
| US 20030141481 | IPCI F25D0001-00 [ICM,7]; C09K0005-00 [ICS,7]
IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30
[I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*];
C09K0005-04 [I,A]
NCL 252/067.000; 521/050.000
ECLA C08J0009/14P; C09K003/30; C09K005/04B4B | | |
| EP 1458796 | IPCI C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0005-00
[I,C]; C09K0005-04 [I,A]
IPCR C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30
[I,C*]; C09K0003-30 [I,A]
ECLA C08J0009/14P; C09K003/30; C09K005/04B4B | | |
| JP 2005513181 | IPCI C09K0003-00 [ICM,7]; C08J0009-14 [ICS,7]; C08J0009-00
[ICS,7,C*]; C08L0075-04 [ICS,7]; C08L0075-00 [ICS,7,C*]
IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30
[I,A]; C09K0003-30 [I,C*]; C09K0005-00 [I,C*];
C09K0005-04 [I,A]
FTERM 4F074/AA78; 4F074/BA45; 4F074/BA53; 4F074/BA73 | | |
| CN 1617903 | IPCI C08J0009-14 [ICM,7]; C08J0009-00 [ICM,7,C*];
C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]
IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-00
[I,C*]; C09K0003-00 [I,A]; C09K0003-30 [I,C*];
C09K0003-30 [I,A]; C09K0005-00 [I,C*]; C09K0005-04
[I,A] | | |
| HU 2006000303 | IPCI C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*]
IPCR C08J0009-00 [I,C*]; C09K0003-00 [I,C*]; C09K0003-30 | | |

[I,C*]; C09K0005-00 [I,C*]; C08J0009-14 [I,A];
 C09K0003-00 [I,A]; C09K0003-30 [I,A]; C09K0005-04 [I,A]
 AT 384096 IPCI C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0005-00
 [I,C]; C09K0005-04 [I,A]
 IPCR C08J0009-00 [I,C]; C08J0009-14 [I,A]; C09K0003-00
 [I,C*]; C09K0003-00 [I,A]; C09K0003-30 [I,C*];
 C09K0003-30 [I,A]; C09K0005-00 [I,C]; C09K0005-04 [I,A]
 ECLA C08J009/14P; C09K003/30; C09K005/04B4B
 ES 2299627 IPCI C08K0005-04 [I,C]; C08J0009-14 [I,A]; C09K0005-00
 [I,C]; C09K0005-04 [I,A]
 IPCR C09K0003-00 [I,C*]; C09K0003-00 [I,A]; C09K0003-30
 [I,C*]; C09K0003-30 [I,A]
 ECLA C08J009/14P; C09K003/30; C09K005/04B4B
 US 20050205832 IPCI C09K0005-04 [I,A]; C09K0005-00 [I,C*]
 IPCR C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C09K0003-30
 [I,C*]; C09K0003-30 [I,A]; C09K0005-00 [I,C*];
 C09K0005-04 [I,A]
 NCL 252/067.000; 264/053.000; 521/072.000
 ECLA C08J009/14P; C09K003/30; C09K005/04B4B

AB The compns. having boiling agent $22^\circ \pm 7^\circ$ at 14.7 psia,
 useful as blowing agents for plastic foams, refrigerants, propellants,
 etc., comprises 1,1,1,3,3-pentafluoropropane, a second component selected
 from decafluoropropane and/or perfluorobutyl Me ether, and a third
 component selected from methanol and/or 1,2-trans-dichloroethylene.
ST pentafluoropropane azeotrope compn blowing agent foam; decafluoropropane
 perfluorobutyl methyl ether compn refrigerant; methanol dichloroethylene
 pentafluoropropane compn

IT Hydrocarbons, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (fluoro; pentafluoropropane-based compns. with good relatively constant
 b.p. and vapor pressure for)

IT Blowing agents
 Propellants (sprays and foams)
 Refrigerants
 (pentafluoropropane-based compns. with good relatively constant b.p. and
 vapor pressure for)

IT Plastic foams
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pentafluoropropane-based compns. with good relatively constant b.p. and
 vapor pressure for)

IT 138495-42-8, 1,1,1,2,3,4,4,5,5,5-Decafluoropentane
 RL: TEM (Technical or engineered material use); USES (Uses)
 (HFC 43-10; pentafluoropropane-based compns. with good relatively
 constant b.p. and vapor pressure for)

IT 163702-07-6, Perfluorobutyl methyl ether
 RL: TEM (Technical or engineered material use); USES (Uses)
 (HFE 449; pentafluoropropane-based compns. with good relatively constant
 b.p. and vapor pressure for)

IT 67-56-1, Methanol, uses 156-60-5, 1,2-trans-Dichloroethylene
 460-73-1, HFC 245fa
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pentafluoropropane-based compns. with good relatively constant b.p. and
 vapor pressure for)

L6 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2002:946394 CAPLUS
DN 138:24468
ED Entered STN: 13 Dec 2002
TI Compositions of hydrofluorocarbons and trans-1,2-dichloroethylene
IN Bogdan, Mary C.; Knopeck, Gary M.; Pham, Hang T.; Singh, Rajiv R.;
 Williams, David L.
PA Honeywell International Inc., USA

SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2

DT Patent

LA English

IC ICM C09K005-04

CC 23-3 (Aliphatic Compounds)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------|---|------|----------|-----------------|----------|
| PI | WO 2002099006 | A1 | 20021212 | WO 2002-US17317 | 20020603 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU | 2002310266 | A1 | 20021216 | AU 2002-310266 | 20020603 |
| US | 20030050356 | A1 | 20030313 | US 2002-161414 | 20020603 |
| US | 6790820 | B2 | 20040914 | | |
| EP | 1425363 | A1 | 20040609 | EP 2002-737330 | 20020603 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| PRAI US | 2001-295050P | P | 20010601 | | |
| | WO 2002-US17317 | W | 20020603 | | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|---------------|-------|---|
| | WO 2002099006 | ICM | C09K005-04 |
| | | IPCI | C09K0005-04 [ICM, 7]; C09K0005-00 [ICM, 7, C*] |
| | | IPCR | C08J0009-00 [I, C*]; C08J0009-14 [I, A]; C09K0003-30 [I, C*]; C09K0003-30 [I, A]; C09K0005-00 [I, C*]; C09K0005-04 [I, A]; C10M0171-00 [I, C*]; C10M0171-00 [I, A] |
| | | ECLA | C08J009/14H2; C08J009/14H2+L75/04; C08J009/14H2F; C09K003/30; C09K005/04B4B; C10M171/00R; M10M; M10M; M10M; M10M; M10N; M10N; M10N |
| AU | 2002310266 | IPCI | C09K0005-04 [ICM, 7]; C09K0005-00 [ICM, 7, C*] |
| US | 20030050356 | IPCI | C08J0009-00 [ICM, 7]; C08K0003-00 [ICS, 7] |
| | | IPCR | C08J0009-00 [I, C*]; C08J0009-14 [I, A]; C09K0003-30 [I, C*]; C09K0003-30 [I, A]; C09K0005-00 [I, C*]; C09K0005-04 [I, A]; C10M0171-00 [I, C*]; C10M0171-00 [I, A] |
| | | NCL | 521/131.000; 252/067.000; 252/182.110; 510/408.000; 062/114.000; 134/010.000; 134/021.000; 134/022.120; 134/022.140; 134/042.000; 252/182.240; 252/182.270; 510/412.000; 510/415.000; 521/050.000; 521/117.000; 521/170.000 |
| | | ECLA | C08J009/14H2+L75/04; C08J009/14H2F; C09K003/30; C09K005/04B4B; C10M171/00R; M10M; M10M; M10M; M10N; M10N; M10N |
| EP | 1425363 | IPCI | C09K0005-04 [ICM, 7]; C09K0005-00 [ICM, 7, C*] |
| | | IPCR | C08J0009-00 [I, C*]; C08J0009-14 [I, A]; C09K0003-30 [I, C*]; C09K0003-30 [I, A]; C09K0005-00 [I, C*]; C09K0005-04 [I, A]; C10M0171-00 [I, C*]; C10M0171-00 [I, A] |

AB The present invention provides compns. comprising ranges of an HFC component (a mixture of 1,1,1,3,3-pentafluorobutane and 1,1,1,3,3-pentafluoropropane) and trans-1,2-dichloroethylene having unexpectedly low and relatively constant b.ps. and uses of said compns. as propellants,

foaming agents or.
 ST compn hydrofluorocarbon dichloroethylene propellant foaming agent
 IT Foaming agents
 Propellants (sprays and foams)
 Refrigerants
 (compns. of hydrofluorocarbons and trans-1,2-dichloroethylene)
 IT Hydrocarbons, uses
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (fluro; compns. of hydrofluorocarbons and trans-1,2-dichloroethylene)
 IT Boiling point
 (low and relatively constant; compns. of hydrofluorocarbons and trans-1,2-dichloroethylene)
 IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6,
 1,1,1,3,3-Pentafluorobutane 460-73-1, 1,1,1,3,3-
 Pentafluoropropane
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (compns. of hydrofluorocarbons and trans-1,2-dichloroethylene)
 RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Anon; WO 0238718 A2 2002 CAPLUS
 (2) Kruecke; US 6080799 A 2000 CAPLUS
 (3) Solvay; WO 0036046 2000 CAPLUS

L6 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 2002:368615 CAPLUS
 DN 136:371784
 ED Entered STN: 18 May 2002
 TI Compositions containing pentafluorobutane as solvents or refrigerants
 IN Dourdin, Pierre
 PA Solvay (Societe Anonyme), Belg.
 SO PCT Int. Appl., 21 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C11D007-50
 ICS C23G005-028; C09K005-04
 CC 48-5 (Unit Operations and Processes)
 Section cross-reference(s): 42, 45
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| PI WO 2002038718 | A2 | 20020516 | WO 2001-EP12988 | 20011107 |
| WO 2002038718 | A3 | 20030103 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
UG, US, UZ, VN, YU, ZA, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2427777 | A1 | 20020516 | CA 2001-2427777 | 20011107 |
| AU 2002027915 | A | 20020521 | AU 2002-27915 | 20011107 |
| EP 1341895 | A2 | 20030910 | EP 2001-989451 | 20011107 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| JP 2004514025 | T | 20040513 | JP 2002-542036 | 20011107 |
| CN 1529748 | A | 20040915 | CN 2001-821754 | 20011107 |
| AU 2002227915 | B2 | 20070628 | AU 2002-227915 | 20011107 |

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|--------------------|-------|--|----------------------|----------|
| US 20040013610 | A1 | 20040122 | US 2003-416062 | 20030507 |
| PRAI FR 2000-14514 | A | 20001108 | | |
| WO 2001-EP12988 | W | 20011107 | | |
| CLASS | | | | |
| PATENT NO. | CLASS | PATENT FAMILY | CLASSIFICATION CODES | |
| ----- | ----- | ----- | ----- | ----- |
| WO 2002038718 | ICM | C11D007-50 | | |
| | ICS | C23G005-028; C09K005-04 | | |
| | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00 [ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*] | | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | | |
| | ECLA | C08G065-00B2F; C08J009/14P; C08L071/02; C09D007/00B; C09K005/04B4B; C11D007/50A6; C11D007/50D2D; C23G0025/08B | | |
| CA 2427777 | IPCI | C11D0007-50 [ICM,7]; C09D0005-00 [ICS,7]; C23G0005-028 [ICS,7]; C23G0005-00 [ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*] | | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | | |
| AU 2002027915 | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00 [ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*] | | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | | |
| EP 1341895 | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00 [ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*]; C09K0005-00 [ICS,7] | | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | | |

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|----------------|-------|--|-------|
| | | | [I,A] |
| JP 2004514025 | IPCI | C09D0007-12 [ICM,7]; C09D0201-00 [ICS,7]; C09K0003-00 [ICS,7]; C11D0007-28 [ICS,7]; C11D0007-22 [ICS,7,C*]; C11D0007-50 [ICS,7]; C23G0005-032 [ICS,7]; C23G0005-00 [ICS,7,C*] | |
| | IPCR | C08G0065-00 [I,A]; C08G0065-00 [I,C*]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,A]; C09D0007-00 [I,C*]; C09K0005-00 [I,A]; C09K0005-04 [I,A]; C11D0007-50 [I,A]; C11D0007-50 [I,C*]; C23G0005-00 [I,C*]; C23G0005-028 [I,A] | |
| | FTERM | 4H003/DA14; 4H003/DA15; 4H003/DC04; 4H003/ED19; 4H003/FA03; 4H003/FA45; 4H003/FA46; 4J038/CD121; 4J038/CD122; 4J038/CG141; 4J038/CG142; 4J038/DF022; 4J038/DL031; 4J038/DL032; 4J038/EA011; 4J038/EA012; 4J038/JA01; 4J038/JA09; 4J038/JA11; 4J038/JA26; 4J038/KA06; 4J038/MA08; 4K053/PA02; 4K053/PA04; 4K053/RA08; 4K053/RA32; 4K053/RA36; 4K053/RA37; 4K053/RA40; 4K053/RA41; 4K053/RA42; 4K053/RA48; 4K053/RA64; 4K053/YA03 | |
| CN 1529748 | IPCI | C11D0007-50 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00 [ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*]; C08J0009-14 [ICS,7]; C08J0009-00 [ICS,7,C*]; C09D0005-00 [ICS,7] | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | |
| | ECLA | C08G065/00B2F; C08J009/14P; C08L071/02; C09D007/00B; C09K005/04B4B; C11D007/50A6; C11D007/50D2D; C23G005/028B | |
| AU 2002227915 | IPCI | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | |
| | ECLA | C08G065/00B2F; C08J009/14P; C08L071/02; C09D007/00B; C09K005/04B4B; C11D007/50A6; C11D007/50D2D; C23G005/028B | |
| US 20040013610 | IPCI | A61L0009-04 [ICM,7]; F25D0001-00 [ICS,7]; C09K0005-00 [ICS,7] | |
| | IPCR | C11D0007-22 [I,C*]; C11D0007-28 [I,A]; C08G0065-00 [I,C*]; C08G0065-00 [I,A]; C08J0009-00 [I,C*]; C08J0009-14 [I,A]; C08L0071-00 [I,C*]; C08L0071-02 [I,A]; C09D0007-00 [I,C*]; C09D0007-00 [I,A]; C09D0007-12 [I,C*]; C09D0007-12 [I,A]; C09D0201-00 [I,C*]; C09D0201-00 [I,A]; C09K0003-00 [I,A]; C09K0005-00 [I,C*]; C09K0005-04 [I,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 [I,A]; C23G0005-032 [I,A] | |

NCL 424/045.000; 252/067.000
ECLA C08G065/00B2F; C08J009/14P; C08L071/02; C09D007/00B;
C09K005/04B4B; C11D007/50A6; C11D007/50D2D;
C23G005/028B

AB Composition useful as refrigerant, heat-transfer fluid, blowing agent, toner fixing agent, drying solvent or degreasing solvent, comprises at least one hydrofluoroalkane having a b.p. ≥ 10 °C at 101.3 kPa such as 1,1,1,3,3-pentafluorobutane and at least one fluoropolyether having a b.p. ≤ 200 °C at 101.3 kPa such as Galden HT 55.

ST hydrofluoroalkane perfluoropolyether compn blowing agent; pentafluorobutane compn refrigerant heat transfer fluid; toner fixing agent pentafluorobutane compn; drying/degreasing solvent pentafluorobutane compn

IT Blowing agents
Coating materials
Heat transfer agents
Refrigerants
(compns. containing pentafluorobutane as solvents or refrigerants)

IT Fluoropolymers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(compns. containing pentafluorobutane as solvents or refrigerants)

IT Pigments, nonbiological
(fixing agents; compns. containing pentafluorobutane as solvents or refrigerants)

IT Polyethers, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(perfluoro; compns. containing pentafluorobutane as solvents or refrigerants)

IT Fluoropolymers, properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyether-, perfluoro; compns. containing pentafluorobutane as solvents or refrigerants)

IT Degreasing agents
Drying agents
(solvent; compns. containing pentafluorobutane as solvents or refrigerants)

IT 156-60-5, trans-1,2-Dichloroethylene 406-58-6,
1,1,1,3,3-Pentafluorobutane 174127-34-5, Galden HT 70 206010-41-5,
Galden HT 55 423756-05-2, Fomblin PFS 1
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(compns. containing pentafluorobutane as solvents or refrigerants)

IT 460-73-1, 1,1,1,3,3-Pentafluoropropane 138495-42-8,
1,1,1,2,3,4,4,5,5,5-Decafluoropentane
RL: TEM (Technical or engineered material use); USES (Uses)
(compns. containing pentafluorobutane as solvents or refrigerants)

L6 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:210301 CAPLUS
DN 132:238748
ED Entered STN: 31 Mar 2000
TI Non-flammable, high-solvency compositions comprising trans-1,2-dichloroethylene, solvent, and inerting agent
IN Westbrook, Greg A.; Tattersall, Thomas A.; Wolff, Mark C.
PA E. I. Du Pont de Nemours & Co., USA
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C11D007-50

| | ICS | C11D011-00; C09K003-30 | | |
|--|---|--|----------------------|----------|
| CC | 46-6 | (Surface Active Agents and Detergents) | | |
| FAN.CNT | 1 | | | |
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI WO 2000017301 | A1 | 20000330 | WO 1999-US21909 | 19990921 |
| W: AU, CA, CN, JP, KR, MX, RU, SG | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| US 6852684 | B1 | 20050208 | US 1999-398234 | 19990917 |
| AU 2000022526 | A | 20000410 | AU 2000-22526 | 19990921 |
| EP 1141215 | A1 | 20011010 | EP 1999-969429 | 19990921 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| PRAI US 1998-101182P | P | 19980921 | | |
| US 1999-398234 | A | 19990917 | | |
| WO 1999-US21909 | W | 19990921 | | |
| CLASS | | | | |
| PATENT NO. | CLASS | PATENT FAMILY | CLASSIFICATION CODES | |
| WO 2000017301 | ICM | C11D007-50 | | |
| | ICS | C11D011-00; C09K003-30 | | |
| | IPCI | C11D0007-50 [ICM,7]; C11D0011-00 [ICS,7]; C09K0003-30 [ICS,7] | | |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0003-37 [I,C*]; C11D0003-37 [I,A]; C11D0007-22 [N,C*]; C11D0007-26 [N,A]; C11D0007-28 [N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A] | | |
| | ECLA | C09K003/30; C11D003/37B12; C11D007/50A2; C11D007/50A6; C11D011/00B2D8; M11D; M11D; M11D | | |
| US 6852684 | IPCI | C11D0003-44 [ICM,7]; C11D0003-43 [ICM,7,C*] | | |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0003-37 [I,C*]; C11D0003-37 [I,A]; C11D0007-22 [N,C*]; C11D0007-26 [N,A]; C11D0007-28 [N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A] | | |
| | NCL | 510/410.000; 510/407.000; 510/408.000 | | |
| | ECLA | C09K003/30; C11D003/37B12; C11D007/50A2; C11D007/50A6; C11D011/00B2D8 | | |
| EP 1141215 | IPCI | C11D0007-50 [ICM,6]; C11D0011-00 [ICS,6]; C09K0003-30 [ICS,6] | | |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0003-37 [I,C*]; C11D0003-37 [I,A]; C11D0007-22 [N,C*]; C11D0007-26 [N,A]; C11D0007-28 [N,A]; C11D0007-50 [I,C*]; C11D0007-50 [I,A]; C11D0011-00 [I,C*]; C11D0011-00 [I,A] | | |
| OS | MARPAT 132:238748 | | | |
| AB | Disclosed are non-flammable, high-solvency compns. having utility as cleaning agents in the electronics and refrigeration industries, and as a medium for mold release agents. The compns. are non-flammable by Flame Extension Test ASTM D-3065 and Flash Point-Tag Closed Cup Test ASTM D-56-82, and have a Kauri Butanol value of at least about 40 by ASTM 1133-94. The compns. comprise the components: a) trans-1,2-dichloroethylene; and b) solvent selected from: i) oxygen-containing solvents selected from alcs., ketones, esters, siloxanes, and ethers; and ii) hydrocarbon solvents represented by $CtH2t+2$ or $CtH2t$, wherein t is from 4 to 8; and c) an inerting agent selected from: i) hydrofluorocarbon inerting agents represented by the formula $CxHyF(2x+2-y)$, wherein x is from 3 to 8, y is from 1 to 4, and the mole ratio of F/H in the hydrofluorocarbon inerting agent is greater than 1.6; ii) hydrofluorocarbon ether inerting agents represented by the formula | | | |

CrF2r+1OCsH2s+1 , wherein r and s are independently selected from 1 to 6, and r is greater than or equal to 2s; and iii) hydrochlorofluorocarbon inerting agents represented by the formulas C2HC12F3, C2HC1F4, and C3HC12F5.

ST trans dichloroethylene mixt nonflammable cleaning solvent

IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(chlorofluorocarbons, solvent; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro, solvent; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT Ethers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoroalkyl, solvent; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT Soldering
(fluxes; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT Cleaning solvents
(non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT Alcohols, uses
Esters, uses
Ethers, uses
Hydrocarbons, uses
Ketones, uses
Siloxanes (nonpolymeric)
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT 1717-00-6, HCFC-141b
RL: NUU (Other use, unclassified); USES (Uses)
(non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT 156-60-5, trans-1,2-Dichloroethylene
RL: TEM (Technical or engineered material use); USES (Uses)
(non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

IT 64-17-5, Ethanol, uses 306-83-2, HCFC-123 354-23-4, HCFC-123a 354-25-6, HCFC-124a 355-37-3 375-17-7 375-61-1, HFC-42-11p 377-36-6, HFC-338ppc 422-44-6 422-48-0 422-56-0, HCFC-225ca 431-31-2, HFC-245eb 431-63-0, HFC-236ea 431-86-7, HCFC-225da 431-89-0, HFC-227ea 460-73-1, HFC-245fa 507-55-1, HCFC-225cb 628-28-4, Butyl methyl ether 628-81-9, Butyl ethyl ether 662-35-1 677-56-5, HFC-236cb 679-86-7, HFC-245ca 680-00-2, HFC-236ca 680-17-1 690-39-1, HFC-236fa 755-23-7 755-45-3, HFC-43-10mf 812-04-4, HCFC-123b 2252-84-8, HFC-227ca 2837-89-0, HCFC-124 2924-29-0 13474-88-9 24270-66-4, HFC-245ea 35230-11-6 75995-72-1 95576-21-9, HFC-43-10mcf 95576-22-0 111512-56-2 119450-58-7 128903-21-9, HCFC-225aa 136013-79-1 136640-02-3 138495-42-8, HFC-43-10mee 150999-42-1 151868-60-9 170444-79-8 170445-02-0
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; non-flammable, high-solvency compns. comprising trans-1,2-dichloroethylene, solvent, and inerting agent)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Ag Technology Kk; JP 09111295 A 1997 CAPLUS
- (2) Du Pont; WO 9728229 A 1997 CAPLUS
- (3) Du Pont; WO 9741189 A 1997 CAPLUS
- (4) Du Pont; WO 9747704 A 1997 CAPLUS

- (5) Eggers, M; US 4961869 A 1990 CAPLUS
 (6) Merchant, A; US 5064560 A 1991 CAPLUS
 (7) Merchant, A; US 5116525 A 1992 CAPLUS
 (8) Merchant, A; US 5250208 A 1993 CAPLUS
 (9) Merchant, A; US 5531916 A 1996 CAPLUS
 (10) Minnesota Mining & Mfg; WO 9837163 A 1998 CAPLUS

L6 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1999:451336 CAPLUS
 DN 131:75624
 ED Entered STN: 23 Jul 1999
 TI Compositions of 1,1,1,3,3-pentafluoropropane and chlorinated ethylenes for solvents and cleaning agents
 IN Swan, Ellen L.; Lavery, Dennis M.
 PA Alliedsignal Inc., USA
 SO PCT Int. Appl., 16 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C09K003-30
 ICS C23G005-028
 CC 48-11 (Unit Operations and Processes)
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| PI WO 9935209 | A1 | 19990715 | WO 1999-US549 | 19990111 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
UA, UG, UZ, VN, YU, ZW | | | | |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 6100229 | A | 20000808 | US 1998-166800 | 19981006 |
| AU 9921119 | A | 19990726 | AU 1999-21119 | 19990111 |
| EP 1047745 | A1 | 20001102 | EP 1999-901419 | 19990111 |
| EP 1047745 | B1 | 20040317 | | |
| R: DE, FR, GB, IT | | | | |
| JP 2002500260 | T | 20020108 | JP 2000-527599 | 19990111 |
| TW 442561 | B | 20010623 | TW 1999-88100382 | 19990320 |
| PRAI US 1998-71128P | P | 19980112 | | |
| US 1998-166800 | A | 19981006 | | |
| WO 1999-US549 | W | 19990111 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|---|
| WO 9935209 | ICM | C09K003-30 |
| | ICS | C23G005-028 |
| | IPCI | C09K0003-30 [ICM,6]; C23G0005-028 [ICS,6]; C23G0005-00
[ICS,6,C*] |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| US 6100229 | ECLA | C09K003/30; C11D007/50D2; C23G005/028B; M11D
C11D0007-30 [ICM,7]; C11D0007-22 [ICM,7,C*];
C11D0007-50 [ICS,7]; C23G0005-028 [ICS,7]; C23G0005-00
[ICS,7,C*]; C09K0005-04 [ICS,7]; C09K0005-00 [ICS,7,C*] |
| | IPCI | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028 |

| | | |
|---------------|--|---|
| | | [I,A] |
| NCL | | 510/408.000; 252/067.000; 252/364.000; 510/184.000;
510/273.000; 516/008.000 |
| ECLA | | C09K003/30; C11D007/50D2; C23G005/028B |
| AU 9921119 | IPCI | C09K0003-30 [ICM,6]; C23G0005-028 [ICS,6]; C23G0005-00
[ICS,6,C*] |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| EP 1047745 | IPCI | C09K0003-30 [ICM,6]; C23G0005-028 [ICS,6]; C23G0005-00
[ICS,6,C*] |
| | IPCR | C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| JP 2002500260 | IPCI | C09K0003-30 [ICM,7]; C23G0005-028 [ICS,7]; C23G0005-00
[ICS,7,C*] |
| | IPCR | C09K0003-30 [I,A]; C09K0003-30 [I,C*]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,A];
C11D0007-50 [I,C*]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| TW 442561 | IPCI | C09K0003-18 [ICM,7]
C09K0003-30 [I,C*]; C09K0003-30 [I,A]; C11D0007-22
[N,C*]; C11D0007-28 [N,A]; C11D0007-50 [I,C*];
C11D0007-50 [I,A]; C23G0005-00 [I,C*]; C23G0005-028
[I,A] |
| AB | Compns. containing 1,1,1,3,3-pentafluoropropane and chlorinated ethylenes (trans-1,2-dichloroethylene, trichloroethylene, methylene chloride), especially azeotrope-like compns., can be used as solvents for aerosols, refrigeration system flushing, oxygen system cleaning and vapor degreasing applications. The compns. contain 0.1-20 weight% chlorinated ethylenes and boil at 14.8-15.2°C ± 0.5°C at 760 mmHg. | |
| ST | pentafluoropropane chlorinated ethylene solvent cleaning degreasing; cleaning solvent pentafluoropropane chlorinated ethylene; degreasing solvent pentafluoropropane chlorinated ethylene | |
| IT | Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(chloro; pentafluoropropane and chlorinated ethylenes as solvents and cleaning agents) | |
| IT | Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoro; pentafluoropropane and chlorinated ethylenes as solvents and cleaning agents) | |
| IT | Cleaning solvents
Solvents
(pentafluoropropane and chlorinated ethylenes as solvents and cleaning agents) | |
| IT | Aerosols
Degreasing
(solvents; pentafluoropropane and chlorinated ethylenes as solvents and cleaning agents) | |
| IT | 74-85-1D, Ethylene, chloro derivs. 75-09-2, uses 79-01-6,
Trichloroethylene, uses 156-60-5, trans-1,2-Dichloroethylene
460-73-1, 1,1,1,3,3-Pentafluoropropane
RL: TEM (Technical or engineered material use); USES (Uses)
(pentafluoropropane and chlorinated ethylenes as solvents and cleaning agents) | |
| RE.CNT | 5 | THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD |
| RE | (1) Atochem Elf Sa; DE 4326469 A 1994 CAPLUS
(2) Du Pont; WO 9615206 A 1996 CAPLUS | |

- (3) Merchant, A; US 5196137 A 1993 CAPLUS
(4) Oestergaard, H; WO 9109077 A 1991 CAPLUS
(5) Pierre, B; US 5478492 A 1995 CAPLUS

L6 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1999:42330 CAPLUS
DN 130:112046
ED Entered STN: 21 Jan 1999
TI Gas chromatographic retention parameters database for refrigerant mixture composition management
AU Bruno, Thomas J.; Bachmeyer, Gregory M.; Wertz, Kelly H.
CS Physical and Chemical Properties Division, Chemical Science and Technology Laboratory, National Institute of Standards and Technology, Boulder, CO, 80303, USA
SO International Journal of Refrigeration (1998), 21(8), 639-647
CODEN: IJRFDI; ISSN: 0140-7007
PB Elsevier Science Ltd.
DT Journal
LA English
CC 48-5 (Unit Operations and Processes)
Section cross-reference(s): 80
AB Composition management of mixed refrigerant systems is a challenging problem in the laboratory, manufacturing facilities, and large refrigeration machinery.
The issue of composition management is especially critical for the maintenance of machinery that utilizes zeotropic mixts. as working fluids. These are fluids in which the gas and liquid phases will generally have greatly different comps. While there are many anal. techniques available for laboratory and online analyses, gas chromatog. probably offers the greatest flexibility at the most reasonable cost. This paper describes a chromatog. database that provides for the identification of refrigerant components, and thereby facilitates composition management of zeotropic fluids. Prior to the description of the database a description is given of the basic theory of chromatog. retention parameters and the exptl. techniques used in their measurement.
ST refrigerant mixt gas chromatog retention parameter
IT Databases
Gas chromatography
Mixtures
Refrigerants
 (gas chromatog. retention parameters database for refrigerant mixture composition management)
IT 127-18-4, Tetrachloroethene, properties
RL: PRP (Properties)
 (R-1110; gas chromatog. retention parameters database for refrigerant mixture composition management)
IT 359-29-5, Ethene, Trichlorofluoro-
RL: PRP (Properties)
 (R-1111; gas chromatog. retention parameters database for refrigerant mixture composition management)
IT 79-35-6, 1,1-Dichloro-2,2-difluoroethene
RL: PRP (Properties)
 (R-1112a; gas chromatog. retention parameters database for refrigerant mixture composition management)
IT 311-81-9, cis-1,2-Dichloro-1,2-difluoroethene
RL: PRP (Properties)
 (R-1112c; gas chromatog. retention parameters database for refrigerant mixture composition management)
IT 381-71-5, trans-1,2-Dichloro-1,2-difluoroethene
RL: PRP (Properties)
 (R-1112t; gas chromatog. retention parameters database for refrigerant

IT mixture composition management)
79-38-9, Chlorotrifluoroethene
RL: PRP (Properties)
(R-1113; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 79-01-6, properties
RL: PRP (Properties)
(R-1120; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 13245-53-9, cis-1,2-Dichloro-1-fluoroethene
RL: PRP (Properties)
(R-1121c; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 13245-54-0, trans-1,2-Dichloro-1-fluoroethene
RL: PRP (Properties)
(R-1121t; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 359-10-4, 2-Chloro-1,1-difluoroethene
RL: PRP (Properties)
(R-1122; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 359-08-0, Ethene, 2-Bromo-1,1-difluoro-
RL: PRP (Properties)
(R-1122B1; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 359-11-5, Trifluoroethene
RL: PRP (Properties)
(R-1123; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-35-4, 1,1-Dichloroethene, properties
RL: PRP (Properties)
(R-1130a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 156-59-2, cis-1,2-Dichloroethene
RL: PRP (Properties)
(R-1130c; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 156-60-5, trans-1,2-Dichloroethene
RL: PRP (Properties)
(R-1130t; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 2317-91-1, 1-Chloro-1-fluoroethene
RL: PRP (Properties)
(R-1131a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-38-7, 1,1-Difluoroethene
RL: PRP (Properties)
(R-1132a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 76-13-1, 1,1,2-Trichlorotrifluoroethane
RL: PRP (Properties)
(R-113; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 354-58-5, 1,1,1-Trichlorotrifluoroethane
RL: PRP (Properties)
(R-113a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 593-60-2, Bromoethene
RL: PRP (Properties)
(R-1140B1; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-02-5, Fluoroethene

RL: PRP (Properties)
(R-1141; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 76-14-2, 1,2-Dichlorotetrafluoroethane
RL: PRP (Properties)
(R-114; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-53-0, 1-Bromo-2-chlorotetrafluoroethane
RL: PRP (Properties)
(R-114B1; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 374-07-2, 1,1-Dichlorotetrafluoroethane
RL: PRP (Properties)
(R-114a; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 76-15-3
RL: PRP (Properties)
(R-115; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-64-3, Iodopentafluoroethane
RL: PRP (Properties)
(R-115I-1; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 76-16-4, Hexafluoroethane
RL: PRP (Properties)
(R-116; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 75-69-4, Trichlorofluoromethane
RL: PRP (Properties)
(R-11; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-14-3, 1,1,2,2-Tetrachloro-1-fluoroethane
RL: PRP (Properties)
(R-121; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-21-2, 1,2,2-Trichloro-1,1-difluoroethane
RL: PRP (Properties)
(R-122; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 306-83-2, 2,2-Dichloro-1,1,1-trifluoroethane
RL: PRP (Properties)
(R-123; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 151-67-7
RL: PRP (Properties)
(R-123B1; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-23-4, 1,2-Dichloro-1,1,2-trifluoroethane
RL: PRP (Properties)
(R-123a; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 677-21-4, 3,3,3-Trifluoropropene
RL: PRP (Properties)
(R-1243b; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 2837-89-0, 2-Chloro-1,1,1,2-tetrafluoroethane
RL: PRP (Properties)
(R-124; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 354-33-6, Pentafluoroethane
RL: PRP (Properties)
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IT mixture composition management)
75-71-8, Dichlorodifluoromethane
RL: PRP (Properties)
(R-12; gas chromatog. retention parameters database for refrigerant
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IT 359-28-4, 1,1,2-Trichloro-2-fluoroethane
RL: PRP (Properties)
(R-131; gas chromatog. retention parameters database for refrigerant
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IT 811-95-0, 1,1,2-Trichloro-1-fluoroethane
RL: PRP (Properties)
(R-131a; gas chromatog. retention parameters database for refrigerant
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IT 1649-09-7, 1,2-Dichloro-1,1-difluoroethane
RL: PRP (Properties)
(R-132b; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-88-7, 2-Chloro-1,1,1-trifluoroethane
RL: PRP (Properties)
(R-133a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 359-35-3, 1,1,2,2-Tetrafluoroethane
RL: PRP (Properties)
(R-134; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 811-97-2, 1,1,1,2-Tetrafluoroethane
RL: PRP (Properties)
(R-134a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-72-9, Chlorotrifluoromethane
RL: PRP (Properties)
(R-13; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 2314-97-8, Iodotrifluoromethane
RL: PRP (Properties)
(R-131,1; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 430-57-9, 1,2-Dichloro-1-fluoroethane
RL: PRP (Properties)
(R-141; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 1717-00-6, 1,1-Dichloro-1-fluoroethane
RL: PRP (Properties)
(R-141b; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-68-3, 1-Chloro-1,1-difluoroethane
RL: PRP (Properties)
(R-142b; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 430-66-0, 1,1,2-Trifluoroethane
RL: PRP (Properties)
(R-143; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 420-46-2, 1,1,1-Trifluoroethane
RL: PRP (Properties)
(R-133a; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 29759-38-4, Tetrafluoroethane
RL: PRP (Properties)
(R-14; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 624-72-6, 1,2-Difluoroethane

RL: PRP (Properties)
(R-152; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 75-37-6, 1,1-Difluoroethane
RL: PRP (Properties)
(R-152a; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 75-00-3
RL: PRP (Properties)
(R-160; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 353-36-6, Fluoroethane
RL: PRP (Properties)
(R-161; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 1599-41-3, 1,2,2-Trichloropentafluoropropane
RL: PRP (Properties)
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IT 76-17-5, 1,2,3-Trichloropentafluoropropane
RL: PRP (Properties)
(R-215ba; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 661-97-2, 1,2-Dichlorohexafluoropropane
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IT 754-34-7, 1-Iodoheptafluoropropane
RL: PRP (Properties)
(R-217I-1; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 76-18-6, 2-Chloroheptafluoropropane
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(R-217ba; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 422-85-5, 1-Bromo-heptafluoropropane
RL: PRP (Properties)
(R-217caB1; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 75-43-4, Dichlorofluoromethane
RL: PRP (Properties)
(R-21; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 422-56-0, 3,3-Dichloro-1,1,1,2,2-pentafluoropropane
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IT 507-55-1, 1,3-Dichloro-1,1,2,2,3-pentafluoropropane
RL: PRP (Properties)
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IT 431-63-0, 1,1,1,2,3,3-Hexafluoropropane
RL: PRP (Properties)
(R-226ea; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 2252-84-8, 1,1,1,2,2,3,3-Heptafluoropropane
RL: PRP (Properties)
(R-227ca; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 431-89-0, 1,1,1,2,3,3,3-Heptafluoropropane
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(R-227ea; gas chromatog. retention parameters database for refrigerant

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75-45-6, Chlorodifluoromethane
RL: PRP (Properties)
(R-22; gas chromatog. retention parameters database for refrigerant
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IT 690-39-1, 1,1,1,3,3,3-Hexafluoropropane
RL: PRP (Properties)
(R-236fa; gas chromatog. retention parameters database for refrigerant
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IT 75-46-7, Trifluoromethane
RL: PRP (Properties)
(R-23; gas chromatog. retention parameters database for refrigerant
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IT 338-75-0, 2,3-Dichloro-1,1,1-trifluoropropane
RL: PRP (Properties)
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mixture composition management)
IT 24270-66-4, 1,1,2,3,3-Pentafluoropropane
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(R-245ca; gas chromatog. retention parameters database for refrigerant
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IT 1814-88-6, 1,1,1,2,2-Pentafluoropropane
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(R-245cb; gas chromatog. retention parameters database for refrigerant
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IT 460-73-1, 1,1,1,3,3-Pentafluoropropane
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(R-245fa; gas chromatog. retention parameters database for refrigerant
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IT 460-35-5, 3-Chloro-1,1,1-trifluoropropane
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IT 40723-63-5, 1,1,2,2-Tetrafluoropropane
RL: PRP (Properties)
(R-254cb; gas chromatog. retention parameters database for refrigerant
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IT 102738-79-4, Propane, 2-Chloro-1,3-difluoro-
RL: PRP (Properties)
(R-262da; gas chromatog. retention parameters database for refrigerant
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IT 421-07-8, 1,1,1-Trifluoropropane
RL: PRP (Properties)
(R-263fb; gas chromatog. retention parameters database for refrigerant
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IT 594-20-7, 2,2-Dichloropropane
RL: PRP (Properties)
(R-270aa; gas chromatog. retention parameters database for refrigerant
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IT 78-87-5, 1,2-Dichloropropane
RL: PRP (Properties)
(R-270da; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 142-28-9, 1,3-Dichloropropane
RL: PRP (Properties)
(R-270fa; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 78-99-9, 1,1-Dichloropropane
RL: PRP (Properties)
(R-270fb; gas chromatog. retention parameters database for refrigerant
mixture composition management)
IT 75-29-6, 2-Chloropropane

RL: PRP (Properties)
(R-280da; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 75-10-5, Difluoromethane
RL: PRP (Properties)
(R-32; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 74-87-3, Chloromethane, properties
RL: PRP (Properties)
(R-40; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 593-53-3, Fluoromethane
RL: PRP (Properties)
(R-41; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 425-82-1, Octane, Hexafluoro-
RL: PRP (Properties)
(R-CE 216; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 3822-68-2, Pentafluorodimethyl ether
RL: PRP (Properties)
(R-E 125; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 1691-17-4, Bis(difluoromethyl)ether
RL: PRP (Properties)
(R-E 134; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 460-43-5, Ethane, 1,1,1-trifluoro-2-methoxy-
RL: PRP (Properties)
(R-E 143a; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 13838-16-9, 2-Chloro-1,1,2-trifluoroethyl difluoromethyl ether
RL: PRP (Properties)
(R-E 235ca2; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 26675-46-7, 1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether
RL: PRP (Properties)
(R-E 235dal; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 57041-67-5, Difluoromethyl 1,2,2,2-Tetrafluoroethyl ether
RL: PRP (Properties)
(R-E 236eal; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 1885-48-9, 2-(Difluoromethoxy)-1,1,1-trifluoroethane
RL: PRP (Properties)
(R-E 24faf; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 627-42-9, 2-Chloroethyl methyl ether
RL: PRP (Properties)
(R-E 280; gas chromatog. retention parameters database for refrigerant mixture composition management)

IT 28523-86-6, Fluoromethyl-2,2,2-trifluoro-1-(trifluoromethyl)ethyl ether
RL: PRP (Properties)
(R-E 347; gas chromatog. retention parameters database for refrigerant mixture composition management)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bruno, T; ASHRAE Transactions 1992, V98(2), P210

(2) Bruno, T; Anal Chem 1996, V68(8), P1347 CAPLUS

(3) Bruno, T; CRC Handbook for the Identification and Analysis of Alternative Refrigerants 1995

(4) Bruno, T; Chromatographic and Electrophoretic Methods 1991

- (5) Bruno, T; J Chromatogr 1994, VA679, P123
 (6) Bruno, T; J Chromatogr 1994, VA672, P149
 (7) Bruno, T; J Chromatogr 1994, VA686, P245
 (8) Bruno, T; J Chromatogr 1995, VA708, P293
 (9) Bruno, T; J Chromatogr 1996, VA736, P175
 (10) Bruno, T; J Chromatogr 1996, VA723, P325
 (11) Budahegyi, M; J Chromatogr 1983, V271, P213 CAPLUS
 (12) Ettre, L; Anal Chem 1964, V36(8), P31A
 (13) Ettre, L; Chromatographia 1973, V6(11), P489 CAPLUS
 (14) Ettre, L; J Chromatogr 1967, V30, P1 CAPLUS
 (15) Evans, M; J Chromatogr 1989, V472, P93 CAPLUS
 (16) Grob, R; Modern Practice of Gas Chromatography 3rd ed 1995
 (17) Haken, J; Adv Chromatogr 1976, V8, P367
 (18) Kovats, E; Helv Chim Acta 1968, V41, P1915
 (19) Sprouse, J; Am Lab 1984, P54 CAPLUS
 (20) Takacs, J; J Chromatogr Sci 1991, V29(9), P382 CAPLUS
 (21) Vernon, F; Chromatographia 1983, V17(11), P597 CAPLUS

L6 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:240623 CAPLUS

DN 126:226762

OREF 126:43831a, 43834a

ED Entered STN: 14 Apr 1997

TI Production of halogenated alkane by reaction of haloalkane with halogenated olefin and selected hydrochlorofluorocarbon compounds and azeotropes with HF

IN Baker, Ralph Thomas; Miller, Ralph Newton; Petrov, Viacheslav Alexandrovich; Rao, Velliyur Nott Mallikarjuna; Sievert, Allen Capron

PA E. I. Du Pont de Nemours & Co., USA

SO PCT Int. Appl., 44 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07C017-278

ICS C07C017-275; C07C019-08; C07C019-10; C07C017-383; C07C017-20

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

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FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|------------------|----------|
| PI | WO 9705089 | A1 | 19970213 | WO 1996-US12547 | 19960731 |
| | W: AI, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK,
EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR,
LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
SD, SE | | | | |
| | RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG | | | | |
| BR | 9609924 | A | 19900608 | BR 1996-9924 | 19960130 |
| CA | 2228287 | A1 | 19970213 | CA 1996-2228287 | 19960731 |
| CA | 2228287 | C | 20080610 | | |
| AU | 9666436 | A | 19970226 | AU 1996-66436 | 19960731 |
| CN | 1196716 | A | 19981021 | CN 1996-197055 | 19960731 |
| CN | 1082039 | C | 20020403 | | |
| EP | 876314 | A1 | 19981111 | EP 1996-926206 | 19960731 |
| EP | 876314 | B1 | 20030226 | | |
| | R: DE, ES, FR, GB, IT, NL | | | | |
| ES | 2190474 | T3 | 20030801 | ES 1996-926206 | 19960731 |
| TW | 4216443 | B | 20010211 | TW 1996-85110736 | 19960903 |
| US | 6291730 | B1 | 20010918 | US 1998-11401 | 19980128 |
| US | 6755942 | B1 | 20040629 | US 2000-638549 | 20000814 |
| US | 20030208090 | A1 | 20031106 | US 2003-460270 | 20030612 |
| US | 6858762 | B2 | 20050222 | | |

| | | | | |
|--------------------|-------|--|-----------------|----------|
| US 200500808302 | A1 | 20050414 | US 2004-9566672 | 20041001 |
| US 7241928 | B2 | 20070710 | | |
| US 20080108852 | A1 | 20080508 | US 2007-809485 | 20070531 |
| PRAI US 1995-1702P | P | 19950801 | | |
| US 1996-14810P | P | 19960404 | | |
| US 1996-19994P | P | 19960618 | | |
| WO 1996-US12547 | W | 19960731 | | |
| US 1998-11401 | A3 | 19980128 | | |
| US 2000-638549 | A3 | 20000814 | | |
| US 2003-460270 | A3 | 20030612 | | |
| US 2004-956672 | A3 | 20041001 | | |
| CLASS | | | | |
| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES | | |
| ----- | ----- | ----- | ----- | ----- |
| WO 9705089 | ICM | C07C017-278 | | |
| | ICS | C07C017-275; C07C019-08; C07C019-10; C07C017-383; | | |
| | | C07C017-20 | | |
| | IPCI | C07C0017-278 [ICM,6]; C07C0017-275 [ICS,6]; C07C0019-08 [ICS,6]; C07C0019-10 [ICS,6]; C07C0019-00 [ICS,6,C*]; C07C0017-383 [ICS,6]; C07C0017-20 [ICS,6]; C07C0017-00 [ICS,6,C*] | | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A]; C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-10 [I,A] | | |
| | ECLA | C07C0017/20D4; C07C0017/20D4+19/08; C07C0017/20D4+19/10; C07C0017/275; C07C0017/275+19/01; C07C0017/275+19/10; C07C0017/278; C07C0017/278+19/10; C07C0017/278+19/16; C07C0017/38; C07C0017/386+19/10; C07C0019/08; C07C0019/10 | | |
| BR 9609924 | IPCI | C07C0017-278 [ICM]; C07C0017-275 [ICS]; C07C0019-08 [ICS]; C07C0019-10 [ICS]; C07C0019-00 [ICS,C*]; C07C0017-383 [ICS]; C07C0017-20 [ICS]; C07C0017-00 [ICS,C*] | | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A]; C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-10 [I,A] | | |
| CA 2228287 | IPCI | C07C0017-20 [I,A]; C07C0017-275 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A]; C07C0017-383 [I,A]; C07C0017-386 [I,A]; C07C0017-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-10 [I,A]; C07C0019-00 [I,C*]; C07C0019-08 [I,A]; C07C0067-00 [I,C*]; C07C0069-63 [I,A]; C07C0069-00 [I,C*]; C07C0253-30 [I,A]; C07C0253-00 [I,C*]; C07C0255-10 [I,A]; C07C0255-00 [I,C*] | | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A]; C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-10 [I,A] | | |
| AU 9666436 | IPCI | C07C0017-278 [ICM,6]; C07C0017-275 [ICS,6]; C07C0019-08 [ICS,6]; C07C0019-10 [ICS,6]; C07C0019-00 [ICS,6,C*]; C07C0017-383 [ICS,6]; C07C0017-20 [ICS,6]; C07C0017-00 [ICS,6,C*] | | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A]; C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08 [I,A]; C07C0019-10 [I,A] | | |
| CN 1196716 | IPCI | C07C0017-278 [ICM,6]; C07C0017-275 [ICS,6]; C07C0019-08 [ICS,6]; C07C0019-10 [ICS,6]; C07C0019-00 [ICS,6,C*]; C07C0017-383 [ICS,6]; C07C0017-20 [ICS,6]; C07C0017-00 [ICS,6,C*] | | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275 | | |

| | | | |
|----------------|------|--|--|
| | | | [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
[I,A]; C07C0019-10 [I,A] |
| EP 876314 | IPCI | C07C0017-278 [ICM,6]; C07C0017-275 [ICS,6]; C07C0019-08
[ICS,6]; C07C0019-10 [ICS,6]; C07C0019-00 [ICS,6,C*];
C07C0017-383 [ICS,6]; C07C0017-20 [ICS,6]; C07C0017-00
[ICS,6,C*] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
[I,A]; C07C0019-10 [I,A] | |
| ES 2190474 | IPCI | C07C0017-278 [ICM,4]; C07C0017-275 [ICS,4]; C07C0019-08
[ICS,7]; C07C0019-10 [ICS,4]; C07C0019-00 [ICS,4,C*];
C07C0017-383 [ICS,4]; C07C0017-20 [ICS,7]; C07C0017-00
[ICS,7,C*] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
[I,A]; C07C0019-10 [I,A] | |
| TW 421643 | IPCI | C07C0017-266 [ICM,7]; C07C0017-00 [ICM,7,C*] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
[I,A]; C07C0019-10 [I,A] | |
| US 6291730 | IPCI | C07C0017-10 [ICM,7]; C07C0017-00 [ICM,7,C*];
C07C0069-63 [ICS,7]; C07C0069-00 [ICS,7,C*];
C07C0255-00 [ICS,7] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-386 [I,A];
C07C0019-00 [I,C*]; C07C0019-10 [I,A] | |
| | NCL | 570/176.000; 558/357.000; 558/378.000; 560/226.000;
560/227.000; 570/164.000; 570/172.000; 570/257.000 | |
| | ECLA | C07C017/20D4+19/08; C07C017/20D4+19/10; C07C017/275;
C07C017/275+19/01; C07C017/275+19/10; C07C017/278;
C07C017/278+19/10; C07C017/278+19/16;
C07C017/386+19/10; C07C019/10 | |
| US 6755942 | IPCI | B01D0003-34 [ICM,7]; C07C0017-08 [ICS,7]; C07C0017-00
[ICS,7,C*] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-386 [I,A];
C07C0019-00 [I,C*]; C07C0019-10 [I,A] | |
| | NCL | 203/067.000; 570/134.000; 570/164.000; 570/165.000;
570/166.000; 570/167.000; 570/168.000; 570/169.000 | |
| | ECLA | C07C017/20D4+19/08; C07C017/20D4+19/10;
C07C017/275+19/01; C07C017/275+19/10;
C07C017/278+19/01; C07C017/278+19/10;
C07C017/278+19/16; C07C017/386+19/10; C07C019/10 | |
| US 20030208090 | IPCI | C07C0253-30 [ICM,7]; C07C0253-00 [ICM,7,C*];
C07C0019-08 [ICS,7]; C07C0019-00 [ICS,7,C*] | |
| | IPCR | C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
[I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
[I,A]; C07C0019-10 [I,A] | |
| | NCL | 558/461.000; 560/227.000; 570/175.000; 570/165.000;
252/182.110; 252/182.120; 252/182.320; 252/183.130;
570/134.000; 570/164.000; 570/166.000; 570/167.000;
570/168.000; 570/169.000 | |
| | ECLA | C07C017/20D4; C07C017/20D4+19/08; C07C017/20D4+19/10;
C07C017/275; C07C017/275+19/01; C07C017/275+19/10;
C07C017/278; C07C017/278+19/10; C07C017/278+19/16;
C07C017/38; C07C017/386+19/10; C07C019/08; C07C019/10 | |
| US 20050080302 | IPCI | C07C0019-10 [I,A]; C07C0019-01 [I,A]; C07C0019-08 | |

[I,A]; C07C0019-00 [I,C*]
 IPCR C07C0017-00 [I,C*]; C07C0017-20 [I,A]; C07C0017-275
 [I,A]; C07C0017-278 [I,A]; C07C0017-38 [I,A];
 C07C0017-386 [I,A]; C07C0019-00 [I,C*]; C07C0019-08
 [I,A]; C07C0019-10 [I,A]
 NCL 570/172.000; 570/135.000; 203/002.000; 203/003.000;
 203/050.000; 203/067.000; 203/074.000; 203/077.000;
 203/080.000; 252/067.000; 510/408.000; 570/156.000;
 570/166.000; 570/167.000; 570/169.000; 570/178.000
 ECLA C07C017/20D4; C07C017/20D4+19/08; C07C017/20D4+19/10;
 C07C017/275; C07C017/275+19/01; C07C017/275+19/10;
 C07C017/278; C07C017/278+19/01; C07C017/278+19/10;
 C07C017/278+19/16; C07C017/38; C07C017/386+19/10;
 C07C019/08; C07C019/10
 US 20080108852 IPCI C07C0017-383 [I,A]; C07C0017-00 [I,C*]; C07C0019-08
 [I,A]; C07C0019-00 [I,C*]
 NCL 570/134.000; 570/178.000
 OS MARPAT 126:226762
 AB A liquid phase process is disclosed for producing halogenated alkane adducts CAR1R2CBR3R4 (A = hydrocarbyl; B = halo other than F; R1-4 = H, Br, Cl, F, alkyl, CN, COMe, CHCl, aryl) by contacting a corresponding halogenated alkane, AB, with a corresponding olefin, CR1R2:CR3R4, in a dinitrile or cyclic carbonate ester solvent which divides the reaction mixture into 2 liquid phases and in the presence of a catalyst system containing (i) ≥1 catalyst selected from monovalent and divalent Cu, and (ii) a promoter selected from aromatic or aliphatic heterocyclic compds. which contain 1 C=N double bond in the heterocyclic ring. When hydrochlorofluorocarbons are formed, the Cl content may be reduced by reacting the hydrochlorofluorocarbons with HF. New halogenated alkane compds. include CF3CF2CC12CH2CC13, CF3CC12CH2CH2Cl and CF3CC12CH2CHClF and these compds. are useful as intermediates for producing hydrofluorocarbons. Azeotropes of CC1F2CH2CF3 with HF and azeotropes of CF3CH2CHF2 with HF and a processes for producing such azeotropes is described. A process for purification of certain hydrofluorocarbons and/or their chloroprecursors from mixts. of such compds. with HF is described. Thus CCl addition reaction with vinylidene chloride at 117-120°/508 kPa maximum for 0.9 h in the presence of CuCl2 and 2-ethyl-oxazoline and adiponitrile solvent gave mostly 1,1,1,3,3-hexachloropropane.
 ST vinylidene chloride reaction carbon tetrachloride; hexachloropropane manuf haloalkane addn dinitrile solvent; carbonate ester solvent haloalkane addn olefin; ethyloxazoline copper addn catalyst haloalkane olefin
 IT Hydrocarbons, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (fluoro; production of halogenated alkane by reaction of haloalkane with halogenated olefin in select solvent, selected hydrochlorofluorocarbon compds. and azeotropes with HF)
 IT Hydrocarbons, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (halo; production of halogenated alkane by reaction of haloalkane with halogenated olefin in select solvent, selected hydrochlorofluorocarbon compds. and azeotropes with HF)
 IT Azetropes
 Solvents
 (production of halogenated alkane by reaction of haloalkane with halogenated olefin in select solvent, selected hydrochlorofluorocarbon compds. and azeotropes with HF)
 IT 460-73-1P, 1,1,1,,3,3-Pentafluoropropane
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (hydrofluorination of pentachloropropane; production of halogenated alkane by reaction of haloalkane with halogenated olefin in select solvent, selected hydrochlorofluorocarbon compds. and azeotropes with HF)
 IT 142-71-2, Copper II acetate 7447-39-4, Copper chloride (CuCl2), uses

- 7681-65-4, Copper I iodide 7758-89-6, Copper chloride (CuCl)
 7758-98-7, Copper II sulfate, uses 7787-70-4, Copper I bromide
 7789-45-9, Copper II bromide 10431-98-8
 RL: CAT (Catalyst use); USES (Uses)
 (production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- IT 755-46-4P 1070-78-6P, 1,1,1,3-Tetrachloropropane 5406-70-2P,
 1,1,1,2,3,3-Hexachloropropane 21260-43-5P 23153-22-2P,
 1,1,1,3-Tetrachloro-3-fluoropropane 79942-56-6P, 1,1,1,3,3-Pentachloro-
 4,4,4-trifluorobutane 175401-04-4P 188253-28-3P 188253-29-4P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- IT 3607-78-1P, 1,1,1,3,3-Hexachloropropane 23153-23-3P,
 1,1,1,3,3-Pentachloropropane
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- IT 460-92-4 690-39-1, 1,1,1,3,3,3-Hexafluoropropane
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- IT 56-23-5, reactions 74-85-1, Ethene, reactions 75-01-4, reactions
 75-02-5, Vinyl fluoride 75-35-4, Vinylidene chloride, reactions
 75-38-7 156-60-5, trans-1,2-Dichloroethylene 354-58-5,
 1,1,1-Trichlorotrifluoroethane 754-34-7, 1-Iodoheptafluoropropane
 4259-43-2, 1,1,1-Trichloropentafluoropropane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 109-77-3,
 Malononitrile 110-61-2, Succinonitrile 111-69-3, Adiponitrile
 544-13-8, Glutaronitrile 629-40-3, Suberonitrile 646-20-8,
 Pinelonitrile 4389-22-4 4437-85-8, Butylene carbonate 17611-82-4,
 Ethyl succinonitrile 28906-50-5, Methyl glutaronitrile
 RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; production of halogenated alkane by reaction of haloalkane with
 halogenated olefin in select solvent, selected hydrochlorofluorocarbon
 compds. and azeotropes with HF)
- L6 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1996:148274 CAPLUS
 DN 124:249231
 OREF 124:45819a, 45822a
 ED Entered STN: 14 Mar 1996
 TI Kovats Retention Indexes of Halocarbons on a Hexafluoropropylene
 Epoxide-Modified Graphitized Carbon Black
 AU Bruno, Thomas J.; Wertz, Kelly H.; Caciari, Michael
 CS Thermophysics Division, National Institute of Standards and Technology,
 Boulder, CO, 80303, USA
 SO Analytical Chemistry (1996), 68(8), 1347-59
 CODEN: ANCHAM; ISSN: 0003-2700
 PB American Chemical Society
 DT Journal
 LA English
 CC 80-6 (Organic Analytical Chemistry)

Section cross-reference(s): 45

AB Kovats retention indexes of 97 halocarbons related to research on alternative refrigerants, propellants, foaming agents, and blowing agents were measured on a packed column stationary phase consisting of a 5% (mass/mass) coating of a low mol. weight polymer of hexafluoropropylene epoxide on graphitized carbon black. The measurements on each fluid were made at four temps., and the thermal dependence of the indexes was modeled with appropriate equations. The modeled values are suitable for the identification of these compds. by gas chromatog. on both laboratory and field instrumentation. The values are also useful for the optimization of more sophisticated analyses needed in specific situations. The stationary phase chosen will provide separation of nearly all the fluids of interest. Also, there is sufficient spread in the retention index values to facilitate fluid identification. The measurements also appear to fit a qual. triangular property diagram that was useful for classifying alternative refrigerant fluids and related compds.

ST Kovats retention index halocarbon gas chromatog; graphitized carbon black hexafluoropropylene epoxide halocarbon

IT Graphitized carbon black
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Kovats retention indexes of halocarbons on hexafluoropropylene epoxide-modified graphitized carbon black)

IT Molecular structure-property relationship
(gas chromatog., Kovats retention indexes of halocarbons on hexafluoropropylene epoxide-modified graphitized carbon black)

IT Hydrocarbons, analysis
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(halo, Kovats retention indexes of halocarbons on hexafluoropropylene epoxide-modified graphitized carbon black)

IT Chromatography, gas
(stationary phases, Kovats retention indexes of halocarbons on hexafluoropropylene epoxide-modified graphitized carbon black)

IT 428-59-1, Hexafluoropropylene epoxide
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Kovats retention indexes of halocarbons on hexafluoropropylene epoxide-modified graphitized carbon black)

IT 74-87-3, R-40, analysis 75-00-3, R 160 75-02-5, R-1141 75-10-5, R-32
75-29-6, R-280Da 75-35-4, R-1130a, analysis 75-37-6, R-152a 75-38-7
75-43-4, R-21 75-45-6, R-22 75-46-7, R-23 75-68-3, R-142b 75-69-4,
R-11 75-71-8, R-12 75-72-9, R-13 75-73-0, R-14 75-88-7, R-133a
76-13-1, R-113 76-14-2, R-114 76-15-3, R-115 76-16-4, R-116
76-17-5, R-215Ba 76-18-6, R-217Ba 78-87-5, R-270Da 78-99-9, R-270Fb
79-01-6, analysis 79-35-6, R-1112a 79-38-9 127-18-4,
Tetrachloroethene, analysis 142-28-9, R-270Fa 151-67-7 156-59-2,
cis-1,2-Dichloroethene 156-60-5, trans-1,2-Dichloroethene
306-83-2, R-123 311-81-9, R-1112c 338-75-0, R-243Db 353-36-6, R-161
354-14-3, R-121 354-21-2, R-122 354-23-4, R-123a 354-33-6, R-125
354-53-0, R-114B1 354-58-5, 1,1,1-Trichlorotrifluoroethane 354-64-3
359-08-0, R-1122B1 359-10-4, R-1122 359-11-5, R-1123 359-28-4
359-29-5 359-35-3, R-134 374-07-2, R 114a 381-71-5, R-112t
420-46-2, R-143a 421-07-8, R-263Fb 422-56-0, R-225Ca 422-85-5,
R-217CaB1 425-82-1 430-57-9, R-141 430-66-0, R-143 431-63-0,
R-236Ea 431-89-0, R-227Ea 460-35-5, 3-Chloro-1,1,1-trifluoropropane
460-43-5 460-73-1, R-245Fa 507-55-1, R-225Cb 593-53-3,
Fluoromethane 593-60-2, R-1140B1 594-20-7, R-270Aa 624-72-6,
1,2-Difluoroethane 627-42-9, 2-Chloroethyl methyl ether 661-97-2,
R-216Ba 677-21-4 679-86-7, R-245Ca 690-39-1, R-236Fa 754-34-7,
1-Iodoheptafluoropropane 811-95-0, 1,1,2-Trichloro-1-fluoroethane
811-97-2, R-134a 1599-41-3, R-215Aa 1649-08-7, R-132b 1691-17-4
1717-00-6, R-141b 1814-88-6, R-245Cb 1885-48-9, 2-(Difluoromethoxy)-
1,1,1-trifluoroethane 2252-84-8, R-227Ca 2314-97-8 2317-91-1,
R-1131a 2837-89-0, R-124 3822-68-2 13245-53-9,

cis-1,2-Dichloro-1-fluoroethene 13245-54-0, trans-1,2-Dichloro-1-fluoroethene 13838-16-9, 2-Chloro-1,1,2-trifluoroethyl difluoromethyl ether 26675-46-7, 1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether 40723-63-5, R-254Cb 55605-86-2 57041-67-5 102738-79-4, R-262Da
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(halocarbons determination by gas chromatog. on hexafluoropropylene epoxide-modified graphitized carbon black stationary phase and Kovats retention indexes)

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=> s 156-60-6/rn or 460-73-1/rn
0 156-60-6/RN
1 460-73-1/RN
L9 1 156-60-6/RN OR 460-73-1/RN

=> s 156-60-5/rn
L10 1 156-60-5/RN

=> d 19;d 110

L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2008 ACS on STN
RN 460-73-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN Propane, 1,1,1,3,3-pentafluoro- (CA INDEX NAME)
OTHER NAMES:
CN 1,1,1,3,3-Pentafluoropropane
CN Enovate 3000

CN F 245fa
CN Genetron 245fa
CN HFA 245fa
CN HFC 245A
CN HFC 245fa
CN R 245a
CN R 245fa
DR 220035-33-6
MF C3 H3 F5
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,
CHEMLIST, CIN, CSCHM, DETHERM*, GMELIN*, PIRA, PROMT, RTECS*,
TOXCENTER, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

F₃C—CH₂—CHF₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

874 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
880 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2008 ACS on STN
RN 156-60-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Ethene, 1,2-dichloro-, (1E)- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Ethene, 1,2-dichloro-, (E)-
CN Ethylene, 1,2-dichloro-, (E)- (8CI)
CN Ethylene, 1,2-dichloro-, trans- (5CI)
OTHER NAMES:
CN (E)-1,2-Dichloroethene
CN (E)-1,2-Dichloroethylene
CN 1,2-trans-Dichloroethene
CN 1,2-trans-Dichloroethylene
CN HCC 1130t
CN NSC 60512
CN R 1130t
CN trans-1,2-Dichloroethene
CN trans-1,2-Dichloroethylene
CN Vertrel CCA
FS STEREOSEARCH
DR 43695-79-0
MF C2 H2 Cl2
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, CA, CAOLD,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHM, CSNB, DETHERM*, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE,
MRCK*, MSDS-OHS, PROMT, RTECS*, SCISEARCH, SPECINFO, TOXCENTER, ULIDAT,
USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3165 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3172 REFERENCES IN FILE CAPLUS (1907 TO DATE)
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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| COST IN U.S. DOLLARS | SINCE FILE | TOTAL | |
| FULL ESTIMATED COST | ENTRY | SESSION | |
| 5.38 | | 150.10 | |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL | |
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